Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)
	)
Amendment of Parts 1, 2, 25, 73, 74, 90, and 97 of	)
the Commission's Rules to Make Non-Substantive	)
Editorial Revisions to the Table of Frequency	)
Allocations and to Various Service Rules	)

MEMORANDUM OPINION AND ORDER

Adopted: March 11, 2008 **Released: March 12, 2008**

By the Chief, Office of Engineering and Technology and the Managing Director:

I. INTRODUCTION

1. By this action, we amend the Commission's Rules[1] to make non-substantive, editorial revisions to the Table of Frequency Allocations (Allocation Table)[2] and related rule sections in Part 2,[3] to the Part 1 quiet zone rules,[4] and to the service rules for satellite communications, international broadcast stations, aural broadcast auxiliary stations, the radiolocation service, and the Amateur Radio Service.[5] These amendments to the Allocation Table are being implemented with the concurrence of the National Telecommunications and Information Administration (NTIA).[6] The purpose of this action is to update and clarify the Allocation Table, as well as to remove obsolete and outdated provisions from the Commission's Rules. In doing so, we can also ensure that the Allocation Table and related rules are

[1] The Chief of the Office of Engineering and Technology (OET) is delegated authority to make non-substantive, editorial revisions to Part 2 of the Commission's Rules and regulations. 47 C.F.R. § 0.241(i). The Managing Director is delegated authority to make non-substantive, editorial revisions to the Commission's Rules and regulations upon approval of the bureau primarily responsible for the particular part or section involved. 47 C.F.R. § 0.231(b).

[2] 47 C.F.R. § 2.106. The Allocation Table is comprised of the International Table, the United States Table, and the FCC Rule Part cross references, as described in further detail herein.

[3] 47 C.F.R. §§ 2.1, 2.104, and 2.105.

[4] 47 C.F.R. § 1.924(g)(1).

[5] These service rules are codified in Parts 25, 73, 74, 90, and 97 of the Commission's Rules, respectively.

[6] Certain of the amendments to the Allocation Table are being made at the request of NTIA. *See* letter from Associate Administrator, Office of Spectrum Management, NTIA, to Chief, OET, dated February 28, 2008. NTIA is an agency of the United States Department of Commerce that serves as the President's principal advisor on telecommunications and information policy issues. NTIA manages Federal use of the radio spectrum and coordinates Federal use with the FCC. NTIA sets forth regulations for Federal use of the radio spectrum within its *Manual of Regulations and Procedures for Federal Radio Frequency Management* (*NTIA Manual*). 47 C.F.R. § 2.1.

consistent with the Commission's decisions in recent rulemaking proceedings.[7] This action is not intended to modify or otherwise change any licensee's underlying legal rights and/or responsibilities.[8]

II. BACKGROUND

2. The Allocation Table is the Commission's means of organizing and presenting how the radio spectrum is to be used by one or more radio services under specified conditions. This Table is comprised of the International Table of Frequency Allocations (International Table), the United States Table of Frequency Allocations (U.S. Table), and the FCC Rule Part cross references, and is displayed as a formatted graphical table of six columns that are divided into cells, with each cell representing a specific frequency band.[9] References to international footnotes,[10] United States (U.S.) footnotes,[11] Federal footnotes,[12] and non-Federal footnotes[13] are shown within the formatted Allocation Table and the text of these footnotes immediately follow that Table.

3. For the allocation of radio frequencies, the International Telecommunication Union (ITU) has divided the world into three Regions.[14] The International Table of Frequency Allocations is shown in Columns 1-3 of the Allocation Table, with each column generally reflecting the corresponding Regional allocation in the ITU *Radio Regulations* (ITU Allocation Table).[15] The International Table is included in the Commission's Allocation Table for informational purposes only.[16]

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[7] This Order does not address any of the actions taken at the 2007 World Radiocommunication Conference, which concluded on November 16, 2007.

[8] Because the actions we take are non-substantive in nature, notice and comment are not required under 5 U.S.C. § 553(b).

[9] The International Table is described in 47 C.F.R. § 2.104. The U.S. Table and the FCC Rule Part(s) column are described in 47 C.F.R. § 2.105.

[10] Any footnote consisting of "5." followed by one or more digits, *e.g.*, 5.53, denotes an international footnote. Where an international footnote is applicable, without modification, to both Federal and non-Federal operations, the Commission places the footnote in both the Federal Table and the non-Federal Table (columns 4 and 5) and the international footnote is binding on both Federal users and non-Federal licensees. 47 C.F.R. § 2.105(d)(5)(i).

[11] Any footnote consisting of the letters "US" followed by one or more digits, *e.g.*, US7, denotes a stipulation affecting both Federal and non-Federal operations. U.S. footnotes appear in both the Federal Table and the non-Federal Table. 47 C.F.R. § 2.105(d)(5)(ii).

[12] Any footnote consisting of the letter "G" followed by one or more digits, *e.g.*, G2, denotes a stipulation applicable only to Federal operations. Federal footnotes appear solely in the Federal Table (column 4). 47 C.F.R. § 2.105(d)(5)(iv).

[13] Any footnote consisting of the letters "NG" followed by one or more digits, *e.g.*, NG2, denotes a stipulation applicable only to non-Federal operations. Non-Federal footnotes appear solely in the non-Federal Table (column 5). 47 C.F.R. § 2.105(d)(5)(iii).

[14] The United States and most of its insular areas are located in Region 2, which is essentially North and South America. Region 1 is generally Europe, Africa, the Middle East, the former Soviet Union, and Mongolia. Region 3 is the rest of Asia and Australasia. See 47 C.F.R. § 2.104(b) for the ITU's official definitions and map of the Regions.

[15] *See* ITU *Radio Regulations*, edition of 2004, Article 5 (Frequency allocations), Section IV (Table of Frequency Allocations) (ITU Allocation Table). Section 2.100 of the Commission's Rules states that: "The ITU *Radio Regulations*, edition of 2004, have been incorporated to the extent practicable in Subparts A and B of this part." In the International Table within § 2.106, we do not replicate typographical or other errors that hold the potential to cause reader confusion or to convey misleading information. *See, e.g.*, *WRC-03 Omnibus R&O*, note 45, *infra* (correcting several display errors).

[16] 47 C.F.R. § 2.104(a).

4. In the United States, radio spectrum may be allocated to either Federal Government (Federal) or non-Federal Government (non-Federal) use exclusively, or for shared use.[17] As such, the U.S. Table is subdivided into the Federal Table of Frequency Allocations (Federal Table) and the non-Federal Table of Frequency Allocations (non-Federal Table).[18] The Federal Table – column 4 of the Allocation Table – describes frequency bands that are administered by NTIA, whereas the non-Federal Table – column 5 of the Allocation Table – describes frequency bands that are administered by the Commission.[19] Column 6 of the Allocation Table is the FCC Rule Part(s) column, which contains cross references to the Commission's service rules, where applicable. The Federal Table and the FCC Rule Part(s) column are included in the Allocation Table for informational purposes only.[20]

5. The amendments in this instant Memorandum Opinion and Order are consistent with past actions that updated and clarified the Allocation Table and related rules. On December 16, 1999, the Commission's Office of Engineering and Technology (OET) and Office of Managing Director (OMD) adopted the *First Table Clean-up Order*, which, like this action, made non-substantive revisions to the rules to update the Allocation Table and supporting rule sections in Part 2.[21] On August 1, 2002, OET and OMD adopted the *Second Table Clean-up Order*, which updated the International Table to reflect the 2001 ITU *Radio Regulations*.[22]

III. DISCUSSION

6. In Sections A through E of this Memorandum Opinion and Order, we make changes that pertain to specific non-Federal radio services. In Section F, we reclassify three footnotes in order to correct and simplify the U.S. Table. In Sections G and H, at the request of NTIA, we update several radio astronomy footnotes and make additional modifications to the U.S. Table that will promote continued successful spectrum sharing between Federal agencies and non-Federal licensees. In Section I, we make additional display and footnote changes to the U.S. Table and to the description of the U.S. Table. In Appendix A, we make minor changes to the Allocation Table, to the text of several footnotes, and to Section 2.105; and in Appendix B, we update several of the FCC Rule Part cross references contained in Column 6 of the Allocation Table.

A. Satellite Issues

7. *NGSO MSS Feeder Links*. In January 2002, the Commission allocated spectrum to the fixed-satellite service (FSS) in order to provide necessary feeder link spectrum for a number of commercial Non-Geostationary Satellite Orbit Mobile-Satellite Service (NGSO MSS) systems.[23] Specifically, the Commission allocated the bands 5091-5250 MHz and 15.43-15.63 GHz for Earth-to-space transmissions (uplinks) and the band 6700-7025 MHz for space-to-Earth transmissions (downlinks). In addition, the Commission grandfathered two satellite systems and their associated earth stations at three sites in the downlink band 7025-7075 MHz. The Commission limited the use of these

[17] 47 C.F.R. § 2.105(b).

[18] 47 C.F.R. § 2.105(a).

[19] *Id.*

[20] 47 C.F.R. § 2.105(d)(3) and (e).

[21] Amendment of Part 2 of the Commission's Rules to Make Non-Substantive Revisions to the Table of Frequency Allocations, *Memorandum Opinion and Order*, 15 FCC Rcd 3459 (2000) (*First Table Clean-up Order*).

[22] Amendment of Part 2 of the Commission's Rules to Make Non-Substantive Revisions to the Table of Frequency Allocations, *Order*, 17 FCC Rcd 15263 (2002) (*Second Table Clean-up Order*).

[23] Amendment of Parts 2, 25 and 97 of the Commission's Rules with Regard to the Mobile-Satellite Service Above 1 GHz, ET Docket No. 98-142, *Report and Order*, 17 FCC Rcd 2658 (2002).

FSS allocations to feeder links that will be used in conjunction with the service links of NGSO MSS systems.

8. To implement this decision, the Commission modified the Allocation Table. It also amended the table in Section 25.202(a)(1) of its Rules, which lists the frequency bands that are available for FSS use (FSS Table), by adding the bands 5.091-5.25 GHz and 15.43-15.63 GHz to the Earth-to-space column and by adding the band 6.7-7.025 GHz to the space-to-Earth column.[24] The Commission applied existing note 12 to each of these bands and adopted a note that contains the conditions that apply to each of the uplink bands.[25] The Commission also added power flux-density (pfd) limits for the downlink band in Section 25.208(n) of its Rules.[26] We note, however, that the amendments to the FSS Table were not properly codified and, thus, the FSS Table fails to list the NGSO MSS feeder link bands and their associated notes. In addition, we note that there is a typographical error in the pfd limits in Section 25.208(n). Because of these errors, Part 25 of the Rules fails to fully reflect the Commission's decision in the *MSS Feeder Link R&O*. Accordingly, we are correcting Section 25.202(a)(1) by amending the FSS Table to add: (1) "5.091-5.25 [12, 19]" and "15.43-15.63 [12, 20]" to the Earth-to-space (GHz) column; (2) "6.7-7.025 [12]" to the space-to-Earth (GHz) column; and (3) two notes (notes 19 and 20) that cross-reference the footnotes to Allocation Table that are applicable to the feeder uplink bands.[27] We also take this opportunity to correct the heading of the "Space-to-Earth (GHz)" column in the FSS Table to read "space-to-Earth (GHz);" to delete a partially duplicate entry in the FSS Table;[28] and to correct a typographical error in Section 25.208(n) of the Rules.[29] All of these modifications are reflected in Appendix C.

9. *17/24 GHz BSS*. On May 2, 2007, the Commission adopted processing and service rules for the 17/24 GHz Broadcasting-Satellite Service (BSS).[30] As background, the 1992 World Administrative

[24] 47 C.F.R. § 25.202(a)(1). The FSS Table lists frequency bands in gigahertz (GHz). As a consequence of adding the NGSO MSS feeder link bands to Part 25, the Commission also added a Part 25 cross reference to the FCC Rule Part column of the Allocation Table for these bands.

[25] Note 12 reads as follows: Use of this band by non-geostationary satellite orbit systems in the fixed-satellite service is limited to gateway earth station operations. 47 C.F.R. § 25.202(a)(1), note 12, revision year 2002. Note 14 was placed to the right of the band 5.091-5.25 GHz and it read as follows: See 47 CFR 2.106, footnotes S5.444A and US344, for conditions that apply to this band. Note 15 was placed to the right of the band 15.43-15.63 GHz and it read as follows: See 47 CFR 2.106, footnotes S5.511C and US359, for conditions that apply to this band.

[26] 47 C.F.R. § 25.208(n).

[27] In the 2004 edition of the C.F.R., there are 17 notes to the FSS Table. 47 C.F.R. § 25.202(a)(1). The *17/24 GHz BSS R&O* added note 18 to the FSS Table. See *17/24 GHz BSS R&O*, note 26, *infra*, at amendatory instruction 10. Because the Commission has added notes 14-18 to the FSS Table since its adoption of the *NGSO MSS Feeder Link R&O*, the notes that were to be listed as 14 and 15 are being codified as notes 19 and 20.

[28] In the space-to-Earth column of the FSS Table, "37.5-40" and "37.6-38.6" are listed. We are deleting "37.6-38.6" GHz because it is a sub-band of the larger band 37.5-40 GHz.

[29] 47 C.F.R. § 25.208(n). Specifically, we are amending Table N by adding a negative sign to "144," which will correct the pfd limit in a 4 kHz reference bandwidth for angles of arrival between 25° and 90° in the band 6825-7075 MHz.

[30] The term "17/24 GHz BSS" generally refers to geostationary BSS satellites that will transmit to subscribers in the band 17.3-17.7 GHz and to associated earth stations that will transmit to the BSS satellites (feeder uplinks) in the band 24.75-25.25 GHz. 47 C.F.R. § 25.201. *See* The Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band, IB Docket No. 06-123, *Report and Order and Further Notice of Proposed Rulemaking*, 22 FCC Rcd 8842 (2007) (*17/24 GHz BSS R&O*).

Radio Conference (WARC-92) adopted an additional BSS allocation for Region 2.[31] In 2000, the Commission implemented, in large part, the Region 2 allocation for BSS domestically. The Commission recognized that although the allocation would not be effective for several years, its actions would provide interested parties with sufficient notice and time to design their systems to use this spectrum in the most efficient manner. Because these allocations became effective on April 1, 2007, we are removing the expired text from footnotes NG163 and NG167,[32] and in addition, we are simplifying footnote NG163 by replacing the term "geostationary satellite orbit systems" with "geostationary satellites."[33] Furthermore, we note that footnote US259 is written to anticipate the entry of BSS feeder link stations in the band 17.3-17.7 GHz. Because such operations are now in effect, we are updating the text of footnote US259 to reflect this change.[34] As a consequence of the commencement of BSS feederlink earth station operations, Federal stations in the radiolocation service that transmit in the band 17.3-17.7 GHz are required to operate with an equivalent isotropically radiated power (e.i.r.p.) of less than 51 dBW.

10. We also take this opportunity to amend Part 90 of the Commission's Rules to correctly list a frequency band in the Radiolocation Service Frequency Table.[35] In November 1983, the Commission deleted the radiolocation service allocation from the band 17.3-17.7 GHz.[36] However, this band is still listed in Radiolocation Service Frequency Table as part of the broader band 15,700-17,700 MHz. We have reviewed the Commission's licensing database and have determined that there are no active radiolocation licenses in the band 17.3-17.7 GHz. Accordingly, we are amending Section 90.103(b) of the Rules by revising the band "15,700-17,700" MHz to "15,700-17,300" MHz.

B. International Broadcast Stations

11. In this section we finalize the display of the WARC-92 HF broadcasting (HFBC) bands in the U.S. Table and update the service rules for international broadcast stations in order to recognize that the transition period for the WARC-92 HFBC bands has concluded and that these bands are now allocated exclusively to the broadcasting service. As background, international broadcast stations are broadcast stations employing frequencies allocated to the broadcasting service between 5900 kHz and 26100 kHz, the transmissions of which are intended to be received by the general public in foreign countries.[37] The Commission licenses international broadcast stations to private entities under Part 73, Subpart F of its Rules.

12. In the ITU *Radio Regulations*, 3720 kilohertz of spectrum in ten HF bands are allocated to the broadcasting service on a primary and exclusive basis in all Regions.[38] Of this total, 790 kilohertz

[31] *17/24 GHz BSS R&O*, note 30, *supra*, at para. 3.

[32] 47 C.F.R. § 2.106, footnotes NG163 and NG167.

[33] A geostationary satellite is a geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth's equator and which thus remains fixed relative to the Earth. 47 C.F.R. § 2.1.

[34] *See 17/24 GHz BSS R&O* at Appendix G for the list of currently authorized earth stations operating in the band 17.3-17.7 GHz.

[35] 47 C.F.R. § 90.103(b).

[36] *See* Amendment of Part 2 of the Commission's Rules Regarding Implementation of the Final Acts of the World Administrative Radio Conference, Geneva, 1979, General Docket 80-739, *Second Report and Order*, 49 FR 2357 (January 19, 1984) at p. C-141 (reflecting the deletion) (*WARC-79 Implementation R&O*).

[37] 47 C.F.R. § 73.701(a).

[38] Prior to WARC-92, the following eight bands were allocated exclusively to the HFBC service on a worldwide basis: 5950-6200 kHz, 9500-9900 kHz, 11650-12050 kHz, 13600-13800 kHz, 15100-15600 kHz, 17550-17900 kHz, 21450-21850 kHz, and 25670-26100 kHz. In addition, the band 7100-7300 kHz was allocated to the HFBC service on an exclusive basis in Regions 1 and 3. On the condition that harmful interference is not caused to the

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(21 percent) in ten frequency bands (collectively, the WARC-92 HFBC bands) was shared with other services until the recent conclusion of the ITU transition period on April 1, 2007.[39] Prior to that date, this spectrum was internationally allocated to the broadcasting and fixed services on a co-primary basis in all Regions and certain of these bands were also allocated to the mobile service. As shown in Table A, below, the primary fixed and mobile service allocations in the WARC-92 HFBC bands, which had been listed directly in the ITU Allocation Table, were moved into footnotes 5.136, 5.143, 5.146, and 5.151. These international footnotes provided for a transition period during which the incumbent services were co-primary and after which stations in the incumbent services are limited to communicating only within the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service.

13. At the 2003 World Radiocommunication Conference (WRC-03), the band 7350-7400 kHz was allocated to the broadcasting service on a co-primary basis with the fixed and mobile except aeronautical mobile services until March 29, 2009, at which time this 50 kilohertz will be allocated exclusively for HFBC use. The primary fixed and mobile service allocations in the band 7350-7400 kHz, which had been listed in the ITU Allocation Table, were moved to footnotes 5.143A, 5.143B, and 5.143D. Like the WARC-92 HFBC footnotes, these international footnotes provide for a transition period during which the incumbent services are co-primary with the broadcasting service and after which stations in the incumbent services will be limited to communicating only within the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service.

14. In 2003, the Commission allocated the WARC-92 HFBC bands to the broadcasting service on a co-primary basis with the incumbent fixed and mobile services.[40] In describing this action, the Commission stated that it made:

> "an additional 1640 kilohertz of spectrum available exclusively for use by international broadcast stations, with 850 kilohertz immediately available and the remainder available after a transition period that ends April 1, 2007. Until the completion of the transition period, fixed and mobile stations will be allowed to continue to operate on a primary basis; after that date, these stations will be allowed to continue to operate on the condition that "harmful interference" is not caused to the broadcasting service. This action significantly increases the amount of spectrum available to international broadcasters on a worldwide basis, thus facilitating the sharing of information and entertainment by people throughout the world."[41]

The Commission, acting on a request by NTIA, continued to directly list the fixed and mobile except aeronautical mobile services in the WARC-92 HFBC bands in the U.S. Table. In doing so, the Commission reflected an expectation that fixed and mobile use would continue to be the main uses of

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broadcasting service, fixed stations communicating within national borders may continue to use frequencies in the bands 9775-9900 kHz, 11650-11700 kHz, and 11975-12050 kHz. 47 C.F.R. § 2.106, footnotes 5.147 and US367.

[39] At WARC-92, ten frequency bands were allocated to the broadcasting service. Eight of the WARC-92 HFBC bands are adjacent to six of the original HFBC bands (5900-5950 kHz, 9400-9500 kHz, 11600-11650 kHz, 12050-12100 kHz, 13570-13600 kHz, 13800-13870 kHz, 15600-15800 kHz, and 17480-17550 kHz), one of the WARC-92 HFBC bands is adjacent to the Regional allocation at 7100-7300 kHz (7300-7350 kHz), and one of the WARC-92 HFBC bands is not adjacent to an original HFBC band (18900-19020 kHz).

[40] *See* Amendment of Parts 2, 73, 74, 80, 90, and 97 of the Commission's Rules to Implement Decisions from World Radiocommunication Conferences Concerning Frequency Bands Below 28000 kHz, *Report and Order*, 18 FCC Rcd 3423 (2003) ("*Below 28 MHz R&O*"). The Commission deleted unused non-Federal fixed service allocations from the WARC-79 HFBC bands and, in the WARC-92 HFBC bands, decided that it would cease to issue licenses for new non-Federal stations in the fixed and mobile services on April 1, 2007. See *Below 28 MHz R&O*, 18 FCC Rcd at 3426, 3428, and 3430, paras. 6, 8, 12, and 14.

[41] *Below 28 MHz R&O* at para. 2.

these bands in the United States until the transition period concluded on April 1, 2007. The Commission also adopted footnote US366, which contains the transition plan for the WARC-92 HFBC bands.

15. In the *WRC-03 Omnibus R&O*, the Commission allocated the band 7350-7400 kHz to the broadcasting service on a co-primary basis with the fixed and mobile except aeronautical mobile services.[42] At that time, the Commission deleted the fixed and mobile except aeronautical mobile service allocations from the band 7300-7400 kHz in the U.S. Table and adopted footnote US396, which provided the transition plan for this band.

16. Because the ITU transition period for fixed and mobile except aeronautical mobile services has now concluded, we are finalizing the display in the Allocation Table of the fixed and mobile except aeronautical mobile services in the WARC-92 HFBC bands. Accordingly, we are deleting the fixed and mobile except aeronautical mobile service allocations from the U.S. Table in the WARC-92 HFBC bands. We are also amending footnotes US366 and US396 as set forth in Appendix C. Doing so enables us to: (1) move the WARC-92 HFBC band (7300-7350 kHz) from footnote US396 to footnote US366; (2) remove expired information; and (3) codify the provisions that apply to stations in the fixed and mobile except aeronautical mobile services that operate in the WARC-92 HFBC bands in a clearer manner. Table A, below, depicts the changes that we are making in the U.S. Table to the WARC-92 HFBC bands and to the band 7350-7400 kHz.

Table A: The Ten WARC-92 HFBC Bands (790 kilohertz) and the Band 7350-7400 kHz

International Table	Current U.S. Table		Revised U.S. Table
	Federal Table	Non-Federal Table	
5900-5950 BROADCASTING 5.134 5.136	5900-5950 BROADCASTING 5.134 FIXED MOBILE except aeronautical mobile US340 US366		5900-5950 BROADCASTING 5.134 US340 US366
7300-7400 BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D	7300-7400 BROADCASTING 5.134 US340 US396		7300-7400 BROADCASTING 5.134 US340 US366 US396
9400-9500 BROADCASTING 5.134 5.146	9400-9500 BROADCASTING 5.134 FIXED US340 US366		9400-9500 BROADCASTING 5.134 US340 US366
11600-11650 BROADCASTING 5.134 5.146	11600-11650 BROADCASTING 5.134 FIXED US340 US366		11600-11650 BROADCASTING 5.134 US340 US366
12050-12100 BROADCASTING 5.134 5.146	12050-12100 BROADCASTING 5.134 FIXED US340 US366		12050-12100 BROADCASTING 5.134 US340 US366
13570-13600 BROADCASTING 5.134 5.151	13570-13600 BROADCASTING 5.134 FIXED Mobile except aeronautical mobile US340 US366	13570-13600 BROADCASTING 5.134 US340 US366	13570-13600 BROADCASTING 5.134 US340 US366

[42] *See* Amendment of Parts 2, 25, and 73 of the Commission's Rules to Implement Decisions from the World Radiocommunication Conference (Geneva, 2003) (WRC-03) Concerning Frequency Bands Between 5900 kHz and 27.5 GHz and to Otherwise Update the Rules in this Frequency Range, *Report and Order*, 20 FCC Rcd 6570 (2005) (*WRC-03 Omnibus R&O*) at para. 39; see also paras. 2, 16, 22, 24-27, 29, and 34.

Table A: The Ten WARC-92 HFBC Bands (790 kilohertz) and the Band 7350-7400 kHz (cont.)

International Table	Current U.S. Table		Revised U.S. Table
	Federal Table	Non-Federal Table	
13800-13870 BROADCASTING 5.134 5.151	13800-13870 BROADCASTING 5.134 FIXED Mobile except aeronautical mobile US340 US366	13800-13870 BROADCASTING 5.134 FIXED US340 US366	13800-13870 BROADCASTING 5.134 US340 US366
15600-15800 BROADCASTING 5.134 5.146	15600-15800 BROADCASTING 5.134 FIXED US340 US366		15600-15800 BROADCASTING 5.134 US340 US366
17480-17550 BROADCASTING 5.134 5.146	17480-17550 BROADCASTING 5.134 FIXED US340 US366	17480-17550 BROADCASTING 5.134 US340 US366	17480-17550 BROADCASTING 5.134 US340 US366
18900-19020 BROADCASTING 5.134 5.146	18900-19020 BROADCASTING 5.134 FIXED US340 US366	18900-19020 BROADCASTING 5.134 US340 US366	18900-19020 BROADCASTING 5.134 US340 US366

17. We are also amending the service rules for international broadcast stations by updating Section 73.702. Specifically, we are moving the WARC-92 HFBC bands from the list of co-primary worldwide allocations to the list of exclusive worldwide allocations, *i.e.*, from paragraph (g)(1)(i) to paragraph (f)(1). Because that action will result in only one paragraph under the heading "Worldwide allocations," we are renumbering paragraph (g)(1)(ii) as paragraph (g)(1). Finally, we are removing an expired date from paragraph (g)(2)(i).[43]

C. Amateur Radio Service

18. In this section, we update the Commission's Rules with regard to the Amateur Radio Service in order to unify our allocation and service rules and to reflect prior rulemaking decisions.[44] These actions entail removing an expired footnote from the U.S. Table, as well as making conforming changes to the authorized frequency bands in Section 97.301 and the frequency sharing requirements in Section 97.303 of the Rules.

19. Specifically, we are updating the Allocation Table and service rules for the Amateur Radio Service with regard to the band 75.5-81 GHz (the 4 millimeter band). In the *70/80/90 GHz R&O*, the Commission adopted a transition plan for the amateur use of the segment 75.5-76 GHz.[45] There, the Commission concluded that moving amateur radio operations out of the 75.5-76 GHz band would not pose a major inconvenience to the Amateur Radio Service, but would substantially benefit future fixed services, because it would eliminate the possibility of harmful interference from amateurs. Accordingly, the primary allocations to the amateur and amateur-satellite services in the 75.5-76 GHz band were downgraded from primary to secondary status with secondary use ceasing on January 1, 2006. This transition plan was codified in footnote US387 and in Section 97.303(r)(3) of our amateur service rules. Because the transition period has concluded, we are removing expired footnote US387 from the list of

[43] The second sentence in 47 C.F.R. § 702(g)(1) currently reads as follows: "After March 27, 2005, where practical, requests for frequency assignments in the band 7100-7200 kHz shall be satisfied within the band 7200-7350 kHz."

[44] 47 C.F.R. Part 97.

[45] Allocations and Service Rules for the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands; and Loea Communications Corporation Petition for Rulemaking, WT Docket No. 02-146, *Report and Order*, 18 FCC Rcd 23318 (2003) (*70/80/90 GHz R&O*) at paras. 8 and 11.

U.S. footnotes[46] and we are amending Part 97 of the Commission's Rules to reflect this allocation change by: (1) revising the entry "75.5-81.0" GHz in Section 97.301(a) to read "76-81" GHz; (2) removing paragraphs (r)(2) and (r)(3) from Section 97.303; and (3) renumbering paragraph (r)(1) as paragraph (r).

20. We are making two changes to Part 97 based on the Commission's 2006 *Amateur Phone Band Expansion R&O*.[47] First, we are correcting a typographical error in Section 97.301(d) that occurred during the codification of the 80 meter band. In the *Amateur Phone Band Expansion R&O*, the Commission revised "21.30-21.45" MHz to read "21.275-21.45" MHz in all Regions, but the current codification of the rule does not reflect this change.[48] Second, we note that part of the 40 meter band authorized in Section 97.301(e) was inadvertently overwritten by the *Amateur Phone Band Expansion R&O*.[49] Specifically, in that action, the Commission expanded the frequency segment authorized for amateur voice communications within the 40 meter band by correspondingly reducing a band segment used for narrowband emission types by 25 kHz, from 7.100-7.150 MHz to 7.100-7125 MHz.[50] However, the revised frequency table in Section 97.301(e) of our Rules, which lists authorized frequency bands for Novice Class and Technician Class amateur radio operators, inadvertently omitted the band 7.100-7.125 MHz from Regions 1 and 3.[51] Because the *Amateur Phone Band Expansion R&O* addressed the division of amateur frequencies among permissible emission types and not between geographic ITU Regions, we must further amend Section 97.301(e), as set forth in Appendix C, to implement the Commission's decision. Specifically, we are revising the 40 meter band by reinserting the segment "7.100-7.125" MHz in the Region 1 and Region 3 columns.[52]

21. We take also this opportunity to correct Section 97.303(b) by removing a double negative from the rule.[53]

D. The Band 1427-1432 MHz

22. With regard to the band 1427-1432 MHz, we are improving the display of the fixed and land mobile service allocations directly listed in the U.S. Table. First, in the non-Federal Table, we are highlighting that, in accordance with footnote US350, the use of the primary land mobile service (LMS) allocation in the band 1427-1432 MHz is restricted to telemetry and telecommand operations. Thus, we

[46] As a consequence of deleting footnote US387 from the list of U.S. footnotes, we are removing the reference to footnote US387 from the U.S. Table.

[47] *See* Amendment of Part 97 of the Commission's Rules Governing the Amateur Radio Services, WT Docket No. 04-140, *Report and Order*, 21 FCC Rcd 11643 (2006) (*Amateur Phone Band Expansion R&O*) at 11650 and 11678, para. 12 and Appendix.

[48] Prior to the *Amateur Phone Band Expansion R&O*, the General Class 80 meter band was "21.025-21.200" and "21.30-21.45"MHz in all Regions.

[49] Prior to the *Amateur Phone Band Expansion R&O*, the Novice and Technician Class 40-meter band was "7.050-7.075" in Regions 1 and 3 and "7.100-7.150" MHz in all Regions. 47 C.F.R. § 97.301(e), edition of 2006.

[50] *Amateur Phone Band Expansion R&O* at 11650-51, para. 13.

[51] Both the U.S. Table and the International Table reflect amateur allocations in this band.

[52] *See Amateur Phone Band Expansion R&O*, 21 FCC Rcd at 11650-51, paras. 13-14. *See also* Amendment of Parts 2, 25, and 73 of the Commission's Rules to Implement Decisions from the World Radiocommunication Conference (Geneva, 2003) (WRC-03) Concerning Frequency Bands Between 5900 kHz and 27.5 GHz and to Otherwise Update the Rules in this Frequency Range, *Report and Order*, 20 FCC Rcd 6570 (2005) (*WRC-03 Omnibus R&O*) at note 133 finding that all spectrum that is in common with Region 2 (50 kilohertz) should be made available to Novice Class and Technician Class licensees when they are operating in Region 1 or Region 3. We note that the *Amateur Phone Band Expansion R&O* did not address or otherwise attempt to modify this finding.

[53] Specifically, we are deleting the word "not" from Section 97.303(b). Currently this rule reads in pertinent part as follows: "No amateur station…shall not cause harmful interference…." 47 C.F.R. § 97.303(b).

list "LAND MOBILE (telemetry and telecommand)" in the non-Federal Table for the band 1427-1432 MHz.[54] Specifically, we modify the listing to add the "(telemetry and telecommand)" restriction to the right of the LMS allocation in the band 1427-1429.5 MHz and to add "telecommand" to the existing parenthetical addition in the band 1427.5-1432 MHz. This action makes the LMS use restrictions in the non-Federal Table consistent with the Part 90 telemetry service rules[55] and with allocation decisions made by the Commission when it established the Wireless Medical Telemetry Service (WMTS).[56]

23. Similarly, in the non-Federal Table, we are highlighting that the use of the primary fixed service allocation in the band 1429.5-1432 MHz is restricted to telemetry and telecommand operations by adding "telecommand" to the existing parenthetical addition. This action makes the restrictions on the fixed service in the non-Federal Table consistent with the Part 90 telemetry service rules.[57]

24. Second, in the Federal Table, we are highlighting that the use of the primary land mobile service allocation in the band 1427-1429.5 MHz is restricted to medical telemetry and medical telecommand operations by listing this restriction to the right of the allocation. Thus, we modify the Federal Table for the band 1427-1429.5 MHz to read "LAND MOBILE (medical telemetry and medical telecommand)." As a result of this action, the display of the "nationwide" WMTS bands (608-614 MHz, 1395-1400 MHz, and 1427-1429.5 MHz) will be consistent in the Federal Table.[58] The changes to the band 1427-1432 MHz are shown in Table B, below.

Table B: The Band 1427-1432 MHz

Current U.S. Table		Revised U.S. Table	
Federal Table	Non-Federal Table	Federal Table	Non-Federal Table
1427-1429.5 LAND MOBILE US350 5.341 US352 US398	1427-1429.5 LAND MOBILE Fixed (telemetry) 5.341 US350 US352 US398	1427-1429.5 LAND MOBILE (medical telemetry and medical telecommand) US350 5.341 US352 US398	1427-1429.5 LAND MOBILE (telemetry and telecommand) Fixed (telemetry) 5.341 US350 US352 US398
1429.5-1432	1429.5-1430 FIXED (telemetry) LAND MOBILE (telemetry) 5.341 US350 US352 US398	1429.5-1432	1429.5-1430 FIXED (telemetry and telecommand) LAND MOBILE (telemetry and telecommand) 5.341 US350 US352 US398
	1430-1432 FIXED (telemetry) LAND MOBILE (telemetry) Fixed-satellite (space-to-Earth) US368 5.341 US350 US352 US398		1430-1432 FIXED (telemetry and telecommand) LAND MOBILE (telemetry and telecommand) Fixed-satellite (space-to-Earth) US368 5.341 US350 US352 US398

[54] In the case where there is a parenthetical addition to an allocation in the U.S. Table, that service allocation is restricted to the type of operation so indicated. 47 C.F.R. § 2.105(d)(4).

[55] The Part 90 telemetry rules for the assignment and use of frequencies in the band 1427-1432 MHz are codified in paras. (b) and (c) of Section 90.259 of the Commission's Rules. 47 C.F.R. § 90.259.

[56] The use of the "LAND MOBILE (telemetry and telecommand)" allocation in the band 1427-1429.5 MHz, which will be directly listed in the non-Federal Table, is limited by footnote US350 to medical telemetry and medical telecommand operations on a nationwide basis, except in certain specified areas where general Part 90 telemetry and telecommand operations are alternatively permitted on a primary basis. *See* Amendment of Parts 2 and 95 of the Commission's Rules to Create a Wireless Medical Telemetry Service, ET Docket No. 99-255 and PR Docket No. 92-235, *Report and Order*, 15 FCC Rcd 11206 (2000) at Appendix A.

[57] *Id.*

[58] Within the band 1427-1429.5 MHz, only the sub-band 1429-1429.5 MHz is allocated nationwide for WMTS use. In the sub-band 1427-1429 MHz, the WMTS allocation is nationwide except in the areas listed in footnote US350.

E. The Band 698-941 MHz

25. As described below, we are addressing four footnotes (NG158, NG159, NG31, and US215) in the band 698-941 MHz. Specifically, we are inserting a reference to footnote NG158 in the Allocation Table and we are removing footnotes NG31 and US215 from the Allocation Table. These and related actions are also shown in Tables C and D, below. In addition, we are updating the text of footnote NG159.

26. *Footnote NG158*. In the *700 MHz Second R&O*, the Commission, *inter alia*, shifted the public safety spectrum down in frequency by one megahertz (from 764-776/794-806 MHz to 763-775/793-805 MHz).[59] In an *Erratum*, footnote NG158 was updated to reflect the public safety spectrum shift, but the Allocation Table itself was not updated.[60] We note that, in its previous allocation actions, the Commission allocated the entire band 698-806 MHz to the fixed and mobile services on a primary basis, but that the Commission maintained the primary broadcasting service allocation only in the commercial and guard band portions of that band. Accordingly, we amend the non-Federal Table herein to reflect the totality of the Commission's allocation decisions for the band 698-806 MHz.

27. *Footnote NG159*. The Digital Television Transition and Public Safety Act of 2005 amended, *inter alia*, the Communication Act with regard to the removal and relocation of incumbent broadcast stations.[61] Thus, we are amending footnote NG159 to reflect the transition requirements for full-power television stations and for auxiliary broadcast stations in the band 698-806 MHz. See Appendix C for the revised text of footnote NG159.

28. *BETRS*. In 2004, the Commission revised its rules for the Basic Exchange Telecommunications Radio Service (BETRS).[62] Specifically, the channels for BETRS systems were revised such that the two frequency bands listed in footnote NG31 (816-820 MHz and 861-865 MHz) are no longer listed in Section 22.757. Accordingly, we are removing footnote NG31 from the list of non-Federal Government footnotes.

29. We also take this opportunity to simplify the non-Federal Table by merging: (1) the bands 809-821 MHz, 821-824 MHz, and 824-849 MHz to form the larger band 809-849 MHz;[63] and (2) the bands 854-869 MHz and 869-894 MHz to form the larger band 854-894 MHz.[64]

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[59] Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, *Second Report and Order*, FCC 07-132, adopted July 31, 2007, released August 10, 2007 (*700 MHz Second R&O*).

[60] *Erratum*, DA 07-4384, released October 25, 2007.

[61] The Digital Television Transition and Public Safety Act of 2005 is available at http://www.dtv.gov/DTVAct.pdf. *See also* FCC Consumer Advisory titled "The DTV Transition and LPTV/Class A/Translator Stations," which is available at http://www.fcc.gov/cgb/consumerfacts/DTVandLPTV.html.

[62] Amendment of Part 22 of the Commission's Rules To Benefit the Consumers of Air-Ground Telecommunications Services, WT Docket No. 03-103, *Report and Order and Notice of Proposed Rulemaking*, 20 FCC Rcd 4403 (2005) at paras. 165-166.

[63] In the *Second Erratum* (DA 04-3208, rel. Oct. 6, 2004) to the *800 MHz Report and Order*, the Commission allocated the bands 821-824 MHz and 866-869 MHz to the fixed service on a primary basis for non-Federal use. On November 16, 2007, FCC staff noticed that the fixed service allocation in the band 821-824 MHz had not been added to the FCC Online Table and corrected this error.

[64] After deleting the reference to footnote NG31, the only differences between the band 854-869 MHz and the band 869-894 MHz in the non-Federal Table are the references to footnotes US116 and US268, both of which apply only to the sub-band 890-894 MHz. In the Federal Table, we merge the band 890-894 MHz with the band 894-902 MHz in order to highlight Federal usage. Because footnotes US116 and US268 apply to the band 890-902 MHz, we conclude that it will be clearer to the reader if this entire span is shown.

Table C: The Band 698-894 MHz

Current Entries		Revised Entries	
Non-Federal Table (MHz)	FCC Rule Part(s)	Non-Federal Table	FCC Rule Part(s)
698-764 FIXED MOBILE BROADCASTING NG115 NG128 NG142 NG159	Wireless Communication (27) Broadcast Radio (TV)(73) Auxiliary Broadcasting (74) Private Land Mobile (90)	698-763 FIXED MOBILE BROADCASTING NG115 NG128 NG142 NG159	Wireless Communications (27) Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
764-776 FIXED MOBILE NG115 NG128 NG142 NG158 NG159	Auxiliary Broadcasting (74) Private Land Mobile (90)	763-775 FIXED MOBILE NG115 NG128 NG142 NG158 NG159	LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H) Private Land Mobile (90R)
776-794 FIXED MOBILE BROADCASTING NG115 NG128 NG142 NG159	Wireless Communications (27) Broadcast Radio (TV)(73) Auxiliary Broadcasting (74) Private Land Mobile (90)	775-793 FIXED MOBILE BROADCASTING NG115 NG128 NG142 NG159	Wireless Communications (27) Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
794-806 FIXED MOBILE NG115 NG128 NG142 NG158 NG159	Auxiliary Broadcasting (74) Private Land Mobile (90)	793-805 FIXED MOBILE NG115 NG128 NG142 NG158 NG159	LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H) Private Land Mobile (90R)
		805-806 FIXED MOBILE BROADCASTING NG115 NG128 NG142 NG159	Wireless Communications (27) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
809-821 FIXED LAND MOBILE NG31	Public Mobile (22) Private Land Mobile (90)	809-849 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
821-824 FIXED LAND MOBILE	Private Land Mobile (90)		
824-849 FIXED LAND MOBILE	Public Mobile (22)		
849-851 AERONAUTICAL MOBILE		849-851 AERONAUTICAL MOBILE	Public Mobile (22)
854-869 FIXED LAND MOBILE NG31	Public Mobile (22) Private Land Mobile (90)	854-894 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
869-894 FIXED LAND MOBILE US116 US268	Public Mobile (22) Private Land Mobile (90)	US116 US268	

30. *Wideband Microwave Ovens.* The band 902-928 MHz is designated for industrial, scientific, and medical (ISM) applications in Region 2 and radiocommunication services operating within this band must accept harmful interference which may be caused by these applications.[65] In 1974, the Commission required that microwave ovens manufactured after 1980 that use the 900 MHz spectrum operate within the band 902-928 MHz and permitted microwave ovens manufactured prior to 1980 to

[65] ISM equipment operating in the band 902-928 MHz is required to have a center frequency of 915 MHz and this equipment is subject to the provisions of ITU Radio Regulation No. 15.13. 47 C.F.R. § 2.106, footnote 5.150 and ITU *Radio Regulations*, Article 15, No. 15.13.

continue to operate in the broader band 902-940 MHz (wideband microwave ovens).[66] The Commission codified its transition plan for wideband microwave ovens in footnote US215.[67]

31. Microwave ovens manufactured prior to January 1, 1980 have been grandfathered for more than 27 years. Given this time frame and recognizing the life cycle of such equipment, it is reasonable to conclude that wideband microwave ovens are no longer in use. Accordingly, we are removing footnote US215 from the list of U.S. footnotes. After deleting the reference to footnote US215 from the band 935-940 MHz, we note that the entries in the Federal Table for this band and the band 940-941 MHz are exactly the same. Therefore, we are combining these bands to form the larger band 935-941 MHz in the Federal Table. These changes are reflected in Table D.

Table D: The Band 902-941 MHz

Current Entries		Revised Entries	
Federal Table	Non-Federal Table	Federal Table	Non-Federal Table
902-928 RADIOLOCATION G59 5.150 US215 US218 US267 US275 G11	902-928 5.150 US215 US218 US267 US275	902-928 RADIOLOCATION G59 5.150 US218 US267 US275 G11	902-928 5.150 US218 US267 US275
928-932	928-929 FIXED US116 US215 US268 NG120	928-932	928-929 FIXED US116 US268 NG120
	929-930 FIXED LAND MOBILE US116 US215 US268		929-930 FIXED LAND MOBILE US116 US268
	930-931 FIXED MOBILE US116 US215 US268		930-931 FIXED MOBILE US116 US268
	931-932 FIXED LAND MOBILE		931-932 FIXED LAND MOBILE
US116 US215 US268 G2	US116 US215 US268	US116 US268 G2	US116 US268
932-935 FIXED US215 US268 G2	932-935 FIXED US215 US268 NG120	932-935 FIXED US268 G2	932-935 FIXED US268 NG120
935-940	935-940 FIXED LAND MOBILE	935-941	935-940 FIXED LAND MOBILE
US116 US215 US268 G2	US116 US215 US268		US116 US268
940-941	940-941 FIXED MOBILE		940-941 FIXED MOBILE
US116 US268 G2	US116 US268	US116 US268 G2	US116 US268

[66] *See* An Inquiry Relative to the Future Use of the Frequency Band 806-960 MHz; and Amendment of Parts 2, 18, 21, 73, 74, 89, 91, and 93 of the Rules Relative to Operations in the Land Mobile Service Between 806 and 960 MHz, Docket No. 18262, *Second Report and Order*, 46 F.C.C. 2d 752 (1974), para. 18.

[67] In response to a petition for reconsideration, the Commission decided that the tolerance required for these ovens was more restrictive than necessary and immediately established the ±13 MHz tolerance for 915 MHz ISM devices, by relaxing the testing procedure used in type approving these devices. As a result, we note that footnote US215 was "amended to remove the provision which would allow ISM devices to make use of the 928-940 MHz band until 1980." Specifically, the Commission amended footnote US215 to read as follows: "Radiocommunications services operating in the band 890-940 MHz must accept any harmful interference from the operation of any ISM device operating in accordance with FCC standards in effect as of the date of manufacture of the ISM device." An Inquiry Relative to the Future Use of the Frequency Band 806-960 MHz; and Amendment of Parts 2, 18, 21, 73, 74, 89, 91, and 93 of the Rules Relative to Operations in the Land Mobile Service Between 806 and 960 MHz, Docket No. 18262, *Memorandum Opinion and Order*, 51 F.C.C. 2d 945 (1975), paras. 18-20. The 1975 revision of footnote US215 was codified in the C.F.R., but it was subsequently overwritten by the original 1974 text in the *WARC-79 Implementation R&O*. Thus, the original 1974 text has continued to shown in the Commission's Rules.

F. Reclassification of Footnotes

32. During our review, we determined that three footnotes (US302, US321, and G106) should be reclassified (as footnotes NG30, NG1, and US1, respectively) in order to correct and simplify the U.S. Table. As background, U.S. footnotes denote a stipulation affecting both Federal and non-Federal operations and appear in both the Federal and non-Federal Tables; whereas non-Federal footnotes denote a stipulation applicable only to non-Federal operations and appear solely in the non-Federal Table.[68] Similarly, Federal footnotes denote a stipulation applicable only to Federal operations and appear solely in the Federal Table.[69]

33. First, we apply the definitions of U.S. and non-Federal footnotes to footnotes US302 and US321,[70] conclude that these footnotes denote stipulations applicable only to non-Federal operations, and conclude that reclassifying these footnotes as non-Federal footnotes would allow us to correct and simplify the U.S. Table.[71] Also, in order to make the text of footnote US302 more consistent with international footnotes, we are highlighting the alternative allocation by listing Puerto Rico first and by modifying the text. Accordingly, we are reclassifying footnotes US302 and US321 as footnotes NG30 and NG1, respectively, which shall read as follows:

> NG1 The band 535-1705 kHz is also allocated to the mobile service on a secondary basis for the distribution of public service information from Travelers Information Stations operating in accordance with the provisions of 47 CFR 90.242 on 10 kilohertz spaced channels from 540 kHz to 1700 kHz.
>
> NG30 In Puerto Rico, the band 942-944 MHz is alternatively allocated to the fixed service (aural broadcast auxiliary stations).

As a consequence of reclassifying footnote US302 as a non-Federal footnote (NG30), we are updating: (1) the cross reference in footnote US301 from "US302" to "NG30;" and (2) Section 74.502 from "US 302" to "NG30." In addition, we are correcting Section 90.242(a)(3) to read "Travelers' Information Stations will be authorized on a primary basis on 530 kHz and on a secondary basis to stations authorized on a primary basis in the band 535-1705 kHz."

34. Next, we apply the definitions of U.S. and Federal footnotes to footnote G106, observe that this footnote denotes a stipulation affecting both Federal and non-Federal operations (*i.e.*, the shutdown provision) that should appear in both the Federal and non-Federal Tables, and conclude that this footnote should be reclassified as U.S. footnote (US1).[72] In order to continue to limit this allocation to Federal use,

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[68] 47 C.F.R. § 2.105(d)(5)(ii) and (d)(5)(iii).

[69] 47 C.F.R. § 2.105(d)(5)(iv).

[70] Footnote US302 currently reads as follows: The band 942-944 MHz in Puerto Rico is allocated as an alternative allocation to the fixed service for broadcast auxiliary stations only. Footnote US321 currently reads as follows: The band 535-1705 kHz is also allocated to the non-Federal mobile service on a secondary basis for the distribution of public service information from Travelers' Information Stations operating in accordance with the provisions of 47 CFR 90.242 on 10 kilohertz spaced channels from 540 kHz to 1700 kHz. 47 C.F.R. § 2.106, footnotes US302 and US321.

[71] Specifically, because the Federal and non-Federal Tables are not merged in the pertinent bands (*i.e.*, the bands that comprise 535-1705 kHz for footnote US321 and the band 941-944 MHz for footnote US302), reclassification allows us to remove unneeded footnote references from the Federal Table without increasing the complexity of the U.S. Table.

[72] Footnote G106 currently reads as follows: "The bands 2501-2502 kHz, 5003-5005 kHz, 10003-10005 kHz, 15005-15010 kHz, 19990-19995 kHz, 20005-20010 kHz and 25005-25010 kHz are also allocated, on a secondary basis, to the space research service. The space research transmissions are subject to immediate temporary or permanent shutdown in the event of interference to the reception of the standard frequency and time broadcasts." 47 C.F.R. § 2.106, footnote G106.

we are adding the phrase "for Federal use" to the footnote. Accordingly, we are reclassifying footnote G106 as a United States footnote (US1), which shall read as follows:

> US1 The bands 2501-2502 kHz, 5003-5005 kHz, 10003-10005 kHz, 15005-15010 kHz, 19990-19995 kHz, 20005-20010 kHz, and 25005-25010 kHz are also allocated to the space research service on a secondary basis for Federal use. In the event of interference to the reception of the standard frequency and time broadcasts, these space research transmissions are subject to immediate temporary or permanent shutdown.

35. We note that this action significantly simplifies the U.S. Table because it allows us to merge 18 cells into only six; see Table E, below.

Table E: Simplifying the Display of Six Standard Frequency and Time Broadcast Bands

Current U.S. Table		Revised U.S. Table	
Federal Table	Non-Federal Table	Federal Table	Non-Federal Table
2495-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz) US340		2495-2505 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	
2501-2502 STANDARD FREQUENCY AND TIME SIGNAL US340 G106	2501-2502 STANDARD FREQUENCY AND TIME SIGNAL US340		
2502-2505 STANDARD FREQUENCY AND TIME SIGNAL US340		US1 US340	
4995-5003 STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz) US340		4995-5005 STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)	
5003-5005 STANDARD FREQUENCY AND TIME SIGNAL US340 G106	5003-5005 STANDARD FREQUENCY AND TIME SIGNAL US340	US1 US340	
9995-10003 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) 5.111 US340		9995-10005 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz)	
10003-10005 STANDARD FREQUENCY AND TIME SIGNAL 5.111 US340 G106	10003-10005 STANDARD FREQUENCY AND TIME SIGNAL 5.111 US340	5.111 US1 US340	
14990-15005 STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) 5.111 US340		14990-15010 STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz)	
15005-15010 STANDARD FREQUENCY AND TIME SIGNAL US340 G106	15005-15010 STANDARD FREQUENCY AND TIME SIGNAL US340	5.111 US1 US340	
19990-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) 5.111 US340 G106	19990-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) 5.111 US340	19990-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) 5.111 US1 US340	
24990-25005 STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz) US340		24990-25010 STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)	
25005-25010 STANDARD FREQUENCY AND TIME SIGNAL US340 G106	25005-25010 STANDARD FREQUENCY AND TIME SIGNAL US340	US1 US340	

G. Radio Astronomy

36. At the request of the National Science Foundation (NSF), NTIA has recommended that five U.S. footnotes that pertain to the radio astronomy service be updated and/or corrected. We believe that implementation of these modifications can assist non-Federal NGSO FSS licensees in identifying their obligation to protect radio observatories that observe in various frequency bands. We are modifying the five footnotes, as follows: First we are amending footnote US355 to revise the entries for the Arecibo Observatory, the Green Bank Telescope, and the Very Large Array (VLA) to include "PR," "WV," and "Socorro, NM," respectively; correct 12 of the 13 coordinates in footnote US355; and list the coordinates in their normal order (*i.e.*, latitude is listed before longitude).[73]

37. Next, we are modifying footnote US388 by: (1) revising the seconds portion of coordinates of the Robert C. Byrd Telescope and the Very Long Baseline Array (VLBA) stations located at Los Alamos and Mauna Kea so that they match the updated coordinates in footnote US355;[74] (2) revising the seconds portion of the coordinates of the University of Arizona's 12 meter telescope at Kitt Peak from 10" to 12" North latitude and from 50" to 53" West longitude;[75] (3) deleting the BIMA telescope at Hat Creek, CA; (4) correcting "Five Colleges" to read "Five College;" (5) revising the seconds portion of the coordinates for the Five College Observatory from 33" to 30" North latitude and from 40" to 42" West longitude; (6) revising the seconds portion of the coordinates for the Haystack Observatory from 23" to 24" North latitude and from 19" to 18" West longitude; (7) revising the seconds portion of the longitude for the Maxwell Telescope from 20" to 47" West; (8) adding the coordinates for the new Combined Array for Research in Millimeter-wave Astronomy (CARMA) telescope; and (9) revising "§ 101.1523" in the Note to read "47 CFR 101.1523."[76]

38. Third, we are amending footnote US117 to correct and simplify its text by: (1) correcting the VLA longitude by two arc seconds;[77] (2) improving the paragraph numbering; (3) employing the simplified coordinate scheme adopted elsewhere in this Order; (4) using State abbreviations and other simplifications; and (5) adding an e-mail address for the spectrum managers of the Arecibo Observatory and the VLA.

39. Fourth, we are amending footnote US311 to make a one arc minute correction to the latitude of the VLBA station in St. Croix, U.S. Virgin Islands (*i.e.*, to correct 17° 46' N to read 17° 45' N). Appendix C reflects all of these modifications.

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[73] Specifically, NTIA recommends that the seconds portion of the coordinates listed in footnote US355 be revised as follows: (1) Arecibo from 46 to 37" N and from 11 to 10" W; (2) Green Bank from 24 to 23" W; (3) VLA from 04 to 06" W; (4) Fort Davis from 39 to 41" W; (5) Kitt Peak from 22 to 23" N and from 42 to 45" W; (6) Los Alamos from 42 to 44" W; (7) Mauna Kea from 16 to 05" N and 29 to 20" W; (8) North Liberty from 26 to 27" W; (9) Owens Valley from 34 to 37" W; (10) Pie Town from 07 to 09" W; and (11) St Croix from 31 to 24" N and 03 to 01" W. NTIA also recommends that the coordinates for the Brewster, WA VLBA station be revised from 48° 07' 53" N, 119° 40' 55" W to 48° 07' 52" N, 119° 41' 00" W.

[74] Specifically, NTIA suggests the following changes: (1) Robert C. Byrd Telescope (Green Bank, WV) from 24" to 23" West longitude; (2) Los Alamos VLBA station from 31" to 30" North latitude; and (3) Mauna Kea VLBA station from 19" to 20" West longitude.

[75] Specifically, NTIA suggests that we update the coordinates of the University of Arizona's 12 meter telescope at Kitt Peak to be 31° 57' 12" N, 111° 36' 53" W.

[76] At the time that footnote US388 was adopted, the coordinates for the new CARMA telescope were unknown, and thus, the Commission could only state that "CARMA will be located at a new, high-altitude site in eastern California." We can now specify that the 150 kilometer coordination radius for the CARMA telescope is centered on 37° 16' 43" N, 118° 08' 32" W.

[77] Specifically, NTIA suggests that the West longitude entry be changed from 107° 37' 04" to 107° 37' 06".

H. Additional U.S. Table Modifications

40. We have identified, in conjunction with NTIA, additional minor changes that will allow us to simplify the U.S. Table and associated footnotes. We believe that these changes, which we describe below, will make the U.S. Table easier to read and understand.

41. First, we are revising the second sentence in footnote US229 to read as follows: "NTIA shall not authorize new Federal assignments in the sub-band 216-217 MHz."[78] Second, we are revising footnotes US7 and US217 to list geographic areas in a simplified and consistent manner. In addition, we are further updating footnote US7 to replace the description of FCC "Engineer In Charge at applicable district office" with "District Director of the applicable field office." We are also updating footnote US217 to delete the unneeded adjectives "Federal and non-Federal."

42. Third, NTIA requests that footnotes US222 and US362 be amended in order to correct the coordinates of the geostationary operational environmental satellite (GOES) earth stations at Wallops Island, Virginia; Fairbanks, Alaska; and Greenbelt, Maryland.[79] In this Order, we are implementing the use of a more uniform terminology and style in the text of domestic footnotes and we find that NTIA's requested text changes will help us accomplish this goal. We also believe that the corrections to footnotes US222 and US362 will be of assistance in the coordination of broadcast auxiliary stations operating near Wallops Island and in the protection of the three primary Federal incumbent receive earth stations, respectively, and amend the footnotes accordingly. Also, we find it unnecessary for the three sites listed in footnote US222 to be separately listed, and therefore, we are listing these sites as part of the sentence. We further note that the coordinates listed in footnote US362 are also codified in Section 1.924(g).[80] Accordingly, we are amending the GOES earth station coordinates in Section 1.924(g) in order to provide consistency within the Commission's Rules.

43. Fourth, we are using the phrase "the United States and its insular areas"[81] to replace "the United States and possessions" in footnotes US247 and we are using the term "conterminous United States" to replace "continental United States" in footnote US11 and "contiguous 48 States" in US217."[82] In addition, we are adding the terms "conterminous United States"[83] and "insular area" and their definitions to Section 2.1.[84] These modifications promote consistency and provide for a common use of these terms.

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[78] 47 C.F.R. § 2.106, footnote US229. The second sentence currently reads as follows: "After January 1, 2002, no new Federal assignments shall be authorized in the band 216-217 MHz."

[79] *See* letter from Associate Administrator, Office of Spectrum Management, NTIA, to Acting Chief, OET, received on September 9, 2005. Specifically, in footnote US222, NTIA requests that the coordinates for Wallops Island be revised from 37° 50' 48" N, 75° 27' 33" W to 37° 56' 44" N, 75° 27' 42" W. With regard to footnote US362, NTIA requests that the GOES earth station coordinates be revised as follows: (1) revise the Wallops Island latitude by 3 arc seconds (from 37° 56' 47" N to 37° 56' 44" N); (2) revise the Fairbanks latitude by 14 arc seconds and the Fairbanks longitude by slightly more than an arc minute (from 64° 58' 36" N, 147° 31' 03" W to 64° 58' 22" N, 147° 30' 04" W); and (3) revise the Greenbelt longitude by 2 arc seconds (from 76° 50' 31" W to 76° 50' 29" W).

[80] 47 C.F.R. § 1.924(g).

[81] We note that the phrase "United States and its insular areas" is used in footnotes US18, US104, US350, US366, US367, US396, and NG66.

[82] This term is defined in Chapter 6 of the *NTIA Manual* at page 6-4.

[83] We note that the term conterminous United States is already used in footnotes US93 and G115.

[84] Section 2.1 contains the terms and definitions that prevail throughout the Commission's Rules. 47 C.F.R. § 2.1.

44. Fifth, footnote US379 was adopted by the Commission in the *Above 76 GHz R&O*.[85] Our review finds that the reference to this footnote was inadvertently overwritten in the *WRC-03 Omnibus R&O*.[86] Therefore, we take this opportunity to correct the U.S. Table by adding "US379" immediately to the right of "FIXED" in the band 55.78-56.9 GHz.

45. Sixth, we are making additional corrections to the Allocation Table, to international, U.S., Federal, and non-Federal footnotes, and to Section 2.105. These revisions are generally of a grammatical, spacing, footnote placement, simplifying, consistency, or typographical nature. Appendix A lists these corrections.

46. Finally, we are updating the FCC Rule Part cross references that are listed in Column 6 of the Allocation Table.[87] Appendix B lists these updates.

I. Additional Changes to the U.S. Table and to its Description

47. In order to make the U.S. Table easier for the American public to use, we are making additional display and footnote changes to the U.S. Table in Subsections 1 through 4 and to the description of the U.S. Table in Subsections 5 and 6.

1. Mobile Except Aeronautical Mobile Service

48. The mobile service is comprised of the aeronautical mobile service, the land mobile service, and the maritime mobile service. In the U.S. Table, the mobile except aeronautical mobile service is generally used when a band is allocated to only the land mobile and maritime mobile services. However, we note that an older display method is still used five times in the non-Federal Table. Specifically, we observe that "LAND MOBILE" and "MARITIME MOBILE" are listed in the band 2107-2170 kHz, 2194-2495 kHz, 2505-2850 kHz, 157.1875-157.45 MHz, and 161.775-162.0125 MHz. Accordingly, we are replacing "LAND MOBILE" and "MARITIME MOBILE" with "MOBILE except aeronautical mobile" in the five frequency bands listed above. This action will simplify the non-Federal Table and will improve upon its internal consistency.

2. NTIA Coordination Requirement

49. We note that eight U.S. footnotes (US337, US338, US344, US348, US359, US360, US368, and US401) explicitly require that the Commission coordinate certain frequency bands with NTIA, but that this requirement is not specified in a uniform manner.[88] Therefore, for consistency, we have herein

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[85] Footnote US379 reads as follows: "In the band 55.78-56.26 GHz, in order to protect stations in the Earth exploration-satellite service (passive), the maximum power density delivered by a transmitter to the antenna of a fixed service station is limited to -28.5 dB(W/MHz)." 47 C.F.R. § 2.106, footnote US379. Amendment of Part 2 of the Commission's Rules to Allocate Additional Spectrum to the Inter-Satellite, Fixed, and Mobile Services and to Permit Unlicensed Devices to Use Certain Segments in the 50.2-50.4 GHz and 51.4-71.0 GHz Bands, ET Docket No. 03-102, *Report and Order*, 19 FCC Rcd 3237 (2004) (*Above 76 GHz R&O*) at para. 25.

[86] *WRC-03 Omnibus R&O* at Appendix A, § 2.106, U.S. Table, wherein footnote US379 is not shown in the in band 55.78-56.9 GHz.

[87] If a frequency or frequency band has been allocated to a radiocommunication service in the non-Federal Table, then a cross reference may be added for the pertinent FCC Rule Part. The FCC Rule Parts listed in Column 6 are not allocations and are provided for informational purposes only. 47 C.F.R. § 2.105(d)(6).

[88] Under current procedures, the Commission coordinates with NTIA through the Frequency Assignment Subcommittee (FAS) of the Interdepartment Radio Advisory Committee (IRAC). The IRAC is a committee of the Federal departments, agencies, and administrations that advises NTIA in assigning frequencies to Federal radio stations and in developing and executing policies, programs, procedures, and technical criteria pertaining to the allocation, management, and use of the spectrum. *See* 47 C.F.R. § 2.1. Currently, footnote US337 requires coordination through the "frequency assignment subcommittee," footnotes US338, US348, and US401 require

(continued....)

amended seven of these footnotes to require coordination with NTIA (*i.e.*, not the FAS or IRAC). We further revise, for clarity, five of the footnotes (US337, US338, US348, US368, and US401). In footnote US338, we are also explicitly stating that the purpose of the coordination is to minimize harmful interference to deep space reception in an adjacent band (2290-2300 MHz). In order to include stations in the mobile except aeronautical mobile service in the coordination requirement specified in footnote US348, we are revising "All fixed and fixed satellite operations" to read "all non-Federal operations." Accordingly, we are amending footnotes US337, US338, US344, US348, US359, US360, US368, and US401 as shown in Appendix C.

3. Adopting Uniform Terminology

50. We note that the terms "segment" and "sub-band" have the same meaning, that both terms are used in U.S. footnotes, and that the term segment is also used in non-Federal footnotes.[89] Because, in this Order, we are attempting to provide greater uniformity within the U.S. Table, it is appropriate for us to adopt a consistent term.[90] Because the term sub-band is used in the ITU *Radio Regulations*, the *NTIA Manual*, and in Part 25 of the Commission's Rules, we conclude that its uniform use in Part 2 is appropriate.[91] In addition, we observe that because every sub-band can be categorized as a band, the term sub-band should only be used in those footnotes that contain a broader frequency band. Accordingly, we are amending: (1) footnotes US267, US335, NG53, and NG147 by replacing "segment" with "sub-band;" (2) footnotes US335, NG172, and NG53 by replacing various uses of "band" with "sub-band;" and (3) footnotes US307, US353, and US354 by replacing various uses of "sub-band" with "band."[92]

51. We observe that three of these footnotes (US267, US307, and NG53) would benefit from further revision. Specifically, we make several minor editorial revisions to footnote US267 to improve its readability.[93] For consistency, we are amending footnote US307 by revising "for space-to-Earth transmissions in the fixed satellite service" to read "to the fixed-satellite service (space-to-Earth)." We observe that footnote NG53 refers to four sub-bands within the band 13.15-13.25 GHz in an unstructured manner. Accordingly, we are amending footnote NG53 to provide an introductory paragraph and to provide a paragraph structure that will assist the reader. We also take this opportunity to introduce the abbreviations used in this footnote.

52. During our review of this issue, we determined that three other footnotes (US351, US378, and NG124) should also be revised for clarity. First, we note that footnote US351 states that the radius of

(...continued from previous page)
coordination through the "Frequency Assignment Subcommittee of the Interdepartment Radio Advisory Committee," footnotes US344 and US359 require coordination through the "Frequency Assignment Subcommittee," footnote US360 states only that coordination is required, and the footnote US368 requires coordination with "NTIA."

[89] Specifically, the term "sub-band" is used in 47 C.F.R. § 2.106, footnotes US90, US217, US229, US307, US334, US351, US353, US354, US378, and US396; and the term "segment" is used in 47 C.F.R. § 2.106, footnotes US267, US335, NG53, NG124, and NG147.

[90] We note the Commission's Rules may contain other references to "segment" and "sub-band." In some cases, such as in the Amateur Radio Service, a particular term may be in common use and it is appropriate to keep the existing terminology. Therefore, our modifications are exclusive to the Part 2 Rules associated with the Allocation Table.

[91] Specifically, the term "sub-band" is used in 47 C.F.R. § 2.106, footnotes 5.425, 5.537A, and G59; and in 47 C.F.R § 25.202, notes 7 and 9, 25.259(c), and 25.260(c).

[92] Footnotes US307, US353, and US354 speak of "sub-bands," but these footnotes do not contain a larger frequency band. We believe that it is unnecessary and potentially confusing for footnotes to use the term "sub-band" if a larger frequency band is not specified in the footnote.

[93] Specifically, we amend footnote US267 by revising "bounded by the area of latitude 39°N. to 42°N. and longitude 103°W. to 108°W" to read "bounded by the area of latitudes 39° N and 42° N and longitudes 103° W and 108° W."

operation at each of the 17 grandfathered sites is 80 km and we conclude that this needless repetition should be removed. Accordingly, we are amending footnote US351 by adding the phrase "80 km radius of operation centered on:" to the top of the table; by deleting the radius columns; and by listing the State abbreviations of the sites in alphabetic order in a new first column.

53. Second, we are restructuring footnote US378 by first listing the areas where Federal fixed and tactical radio relay stations may operate indefinitely and by moving the provision that applies to all other Federal stations from the introductory paragraph to a new paragraph (d). We note that paragraph (a) of footnote US378 contains an unnecessary two-entry table that can be changed into a single sentence. Accordingly, we are amending paragraph (a) of footnote US378 to read as follows: "Federal fixed and tactical radio relay stations may operate indefinitely on a primary basis within 80 km of Cherry Point, NC (34° 58' N, 076° 56' W) and Yuma, AZ (32° 32' N, 113° 58' W)." We note that paragraph (b) of footnote US378 repeats the definition of a secondary service and states that the radius of operation at seven sites is 80 km and that the radius of operation at another seven sites is 50 km. Accordingly, we are amending paragraph (b) of footnote US378 by: (1) removing ", and shall not cause harmful interference to, and must accept harmful interference from,"; (2) adding the phrase "80 km radius of operation centered on:" to the top of the table and by applying it to the first seven entries; (3) adding the phrase "50 km radius of operation centered on:" to the middle of the table and by applying it to the remaining seven entries; (4) deleting the radius columns; and (5) listing the State abbreviations of the locations in alphabetic order in a new first column.

54. Lastly, we note that the reference to footnote NG124 has not been added to all the bands specified in that footnote, that Section 90.20(e) lists the sub-bands that apply to footnote NG124, and that the sub-bands could be listed in footnote NG124 with greater specificity in order to minimize the number of cells in which the footnote reference must be added. Accordingly, we amend footnote NG124 to read as follows: "In the bands 30.85-34, 37-38, 39-40, 42-47.41, 150.995-156.25, 158.715-159.465, 453.0125-453.9875, 458.0125-458.9875, 460.0125-465.6375, and 467.9375-467.9875 MHz, police licensees are authorized to operate low power transmitters on a secondary basis in accordance with the provisions of 47 CFR 2.803 and 90.20(e)(5)." In the non-Federal Table, we add a reference to footnote NG124 in the band 156.2475-157.0375 MHz.

4. Format of Domestic Footnotes

55. We are revising the format of 27 domestic footnotes in order to provide for consistency. First, we are revising the format of five footnotes so that the same paragraph structure of a rule section is also used in domestic footnotes.[94] Thus, we are amending footnotes US11, US335, US368, G6, and NG172 by revising paragraph "(1)" to read "(a)," paragraph "(2)" to read "(b)," *etc*.[95]

56. Second, we are amending nine non-Federal footnotes for clarity and consistency with regard to cross referencing other rule parts or rule sections. Specifically, we note that footnotes NG53, NG141, NG144, NG155, NG158, and NG173 contain the phrase "of this chapter," which refers to chapter I [Federal Communications Commission] of Title 47 [Telecommunication]. The National Science Foundation (NSF) states that the phrase "of this chapter" in domestic footnotes is ambiguous because it

[94] The paragraph structure of a section in the C.F.R. is:
level 1 (a), (b), (c), *etc.*
level 2 (1), (2), (3), *etc.*
level 3 (i), (ii), (iii), *etc.*
level 4 (A), (B), (C), *etc. See Federal Register Document Drafting Handbook*, October 1998 Revision, p. 2-28.

[95] Other revisions to footnotes US368 were previously discussed in para. 49, *supra.*

could be interpreted to mean "this chapter" of the *NTIA Manual* in which the footnotes also appear.[96] We concur and note that the Federal Register provides an alternative means for cross referencing rules. Specifically, the Federal Register's format is "47 CFR" followed by either the rule part (*e.g.*, 47 CFR part 101) or section number (*e.g.*, 47 CFR 101.101). Accordingly, we are amending: (1) footnote NG53 by revising "§ 76.51 of this chapter" to read "47 CFR 76.51;" (2) footnote NG141 by revising "part 22 of this chapter" to read "47 CFR part 22;" (3) footnote NG144 by deleting "of this chapter" from "47 CFR 21.901(e), 74.502(c), 74.602(g), 78.18(a)(4), and 101.147(r) of this chapter;" (4) footnote NG155 by revising "Part 80 of this chapter" to read "47 CFR part 80;" (5) footnote NG158 by revising "Part 90 of this chapter" to read "47 CFR part 90;"and (6) footnote NG173 by revising "§ 90.259 of this chapter" to read "47 CFR 90.259."

57. We note that footnotes NG147, NG149, and NG184 contain similar phrases that should be amended for clarity and consistency. Therefore, in footnote NG147, we are replacing "Part 74 (Television Broadcast Auxiliary Stations), Part 90 (Private Land Mobile Radio Services), or Part 101 (Fixed Microwave Services) of the Commission's Rules" and "Part 27 (Miscellaneous Wireless Communication Services) of the Commission's Rules" with "47 CFR parts 74, 90, or 101" and "47 CFR part 27," respectively. In addition, we are amending footnote NG149 by changing "part 73 of the rules" to read "47 CFR part 73;" and we are amending NG184 from "Part 101, Subpart J of the Commission's Rules" to read "47 CFR part 101, subpart J."

58. Third, in order to make the text of four domestic footnotes (US299, NG28, NG51, and NG141) more consistent with international footnotes, we are highlighting additional and alternative allocations by listing the affected State or insular area first.[97] In addition, we are simplifying and updating footnote NG28 by replacing "remote pickup base and remote pickup mobile stations" and "the land transportation radio service" with "remote pickup broadcast stations" and "stations in the Industrial/Business Pool," respectively. We are updating footnote NG51 by replacing "the bands 150.8-150.98 MHz and 150.98-151.49 MHz are allocated exclusively to the business radio service" with "the use of band 150.8-151.49 MHz by the fixed and land mobile services is limited to stations in the Industrial/Business Pool." Accordingly, we are revising footnotes US299, NG28, NG51, and NG141 as shown in Appendix C.

59. Fourth, we are revising the text of footnotes US7, US11, US81, US251, US252, US262, US311, and NG66, which list various cities and States or insular areas, in order to consistently use the geographical abbreviations for the States and the insular areas that are listed in Annex G of the *NTIA Manual*.[98] At the request of the National Aeronautics and Space Administration (NASA), we are amending footnotes US251 and US311 by revising the coordinates of the Goldstone Deep Space Communication Complex to read 35° 20' N, 116° 53', and we are adding these coordinates to footnotes US252 and US262.[99] Because the first sentence in footnote US262 provides for a non-Federal allocation, we are clarifying the second sentence in footnote US262 by explicitly stating that the geographic limitation applies to Federal and non-Federal use. These modifications are reflected in Appendix C.

[96] On May 24, 2007, Commission staff corrected the FCC Online Table in order to make the text of eight footnotes consistent with the C.F.R. We informed NTIA of these staff corrections and NTIA informed the IRAC members. NSF provided comments on May 30, 2007.

[97] In the ITU *Radio Regulations*, footnotes containing additional or alternative allocations list the countries where these allocations are available first.

[98] *See NTIA Manual*, Annex G, Part 2, pages G-13 and G-14.

[99] Currently, footnotes US251 and US311 list the coordinates for NASA's Goldstone Deep Space Communication Complex as 35° 18' N, 116° 54' W.

60. Lastly, it is our policy to use the terms that are abbreviated in Section 2.1 of the Commission's Rules in the text of footnotes to the U.S. Table in their abbreviated form without introducing the abbreviation.[100] Therefore, we are making the following changes to five U.S. footnotes: (1) "e.r.p." replaces "Effective Radiated Power (ERP)" in footnote US216; (2) "e.i.r.p." replaces "eirp" in footnote US259; (3) "an e.i.r.p. of 40 dBW" replaces "a maximum equivalent isotropically radiated power of 40 dBW" in footnote US265; (4) "47 CFR part 15 or Chapter 7 of the *NTIA Manual*" replaces "Part 15 of the Federal Communications Commission's Rules and Regulations or Chapter 7 of the National Telecommunications and Information Administration's Manual of Regulations and Procedures for Federal Radio Frequency Management" in footnote US294; and (5) "50 watts e.r.p. and to" replaces ": (1) a maximum effective radiated power (e.r.p.) of 50 W; and, (2)" in footnote US381.

5. North American Datum of 1983 (NAD 83)

61. Our review finds that while all of the coordinates listed in footnotes to the U.S. Table are referenced to the North American Datum of 1983 (NAD 83), we do not consistently state this fact. As background, geographic coordinates are referenced to a specific geodetic datum, with NAD 83 and the North American Datum of 1927 (NAD 27) being among the most widely known in the United States.[101] We note that footnotes U7, US117, US217, US222, US251, US311, US338, US346, US348, US351, US355, US361, US362, US378, US393, and US402 do not state the datum to which the coordinates are referenced.[102] NTIA, based on its consultation with the relevant Federal agencies, concurs with our assessment that the coordinates listed in these footnotes are specified in terms of NAD 83.[103] To provide clarity and to avoid potential confusion about the specific datum to which these coordinates are referenced, we are adding a new paragraph (d)(6) to Section 2.105, which will read as follows:

> The coordinates of latitude and longitude that are listed in United States, Federal, and non-Federal footnotes are referenced to the North American Datum of 1983 (NAD 83).

For consistency, we are also removing the now superfluous reference to NAD 83 from footnotes US229, US230, US388, and NG172.

6. Region 2 Insular Areas

62. We take this opportunity to explicitly state that the use of the radio spectrum in the U.S. insular areas located in Region 2 is generally governed by the U.S. Table. That action leads us to the conclusion that listing all Region 2 insular areas in a single note to Section 2.105(a) would be helpful to the reader. Therefore, we are combining the information currently codified in note 2, which lists the Caribbean insular areas, with that currently codified in note 3, which lists the Pacific insular areas in Region 2. Accordingly, note 2 of Section 2.105(a) has been revised to read as follows:

> ² The operation of stations in the U.S. insular areas located in Region 2 are generally governed by the United States Table. The U.S. insular areas located in Region 2 are comprised of the Caribbean insular areas and two of the eleven Pacific insular areas. The Caribbean insular areas are Puerto Rico, the United

[100] 47 CFR § 2.1.

[101] Geodetic datum is a set of constants specifying the coordinate system used for calculating the coordinates of points on the Earth. NAD 83 was developed based on satellite and remote-sensing measurement techniques, and provides greater accuracy than the older NAD 27. *See* http://www.ngs.noaa.gov/faq.shtml#WhatNAD for additional background and frequently asked questions about NAD 83.

[102] By contrast, footnotes US229, US230, US388, and NG172 expressly state that the coordinates listed therein are specified in terms of the NAD 83.

[103] This is consistent with Federal Government practice. We note that, in the Government Master File (GMF), coordinates are referenced to the World Geodetic Spheroid Code 84/National American Datum 83. *See NTIA Manual*, Chapter 9, which is titled "Preparation of Applications for Frequency Assignment Action," at pages 9-31 (XLA), 9-32 (XLG), and 9-39 (RLA and RLG).

States Virgin Islands, and Navassa Island. The Pacific insular areas located in Region 2 are Johnston Atoll and Midway Atoll.

As a consequence of our merging notes 2 and 3, we renumber notes 4 through 6 in Section 2.105(a) as notes 3 through 5, respectively, and we renumber note 7 in Section 2.105(b) as note 6.

IV. ADMINISTRATIVE PROCEDURES ACT REQUIREMENTS AND ORDERING CLAUSE

63. Parts 1, 2, 25, 73, 74, 90, and 97 of the Commission's Rules are amended herein by incorporating non-substantive, editorial revisions only.[104] Therefore, there is good cause for not using notice and comment procedure in this case, and for shortening the effective date of the amendments from a date not less than 30 days after publication in the Federal Register to the date of publication in the Federal Register. We find that the normal procedures for notice and comment and for publication as required under Section 553 of the Administrative Procedures Act would be impracticable, unnecessary, or contrary to the public interest. *See* 5 U.S.C. § 553(b)(3)(B), (d)(3); *Kessler v. FCC*, 326 F.2d 673 (D.C. Cir. 1963).

64. Accordingly, IT IS ORDERED that Parts 1, 2, 25, 73, 74, 90, and 97 of the Commission's Rules, 47 C.F.R. Parts 1, 2, 25, 73, 74, 90, and 97, ARE AMENDED as set forth in Appendix C, effective upon publication in the Federal Register. This action is taken pursuant to authority found in Sections 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i) and 303, and in Sections 0.31, 0.231(b) and 0.241 of the Commission's Rules, 47 C.F.R. §§ 0.31, 0.231(b) and 0.241.

FEDERAL COMMUNICATIONS COMMISSION

Julius P. Knapp
Chief, Office of Engineering and Technology

Anthony Dale
Managing Director

[104] As an exception, the International Table, the Federal Table, and the FCC Rule Part(s) column within § 2.106 are included in the Commission's Rules for informational purposes only and are therefore exempt from the notice provisions of the Administrative Procedures Act.

Appendix A: Additional Changes Not Specifically Described in the Text (* denotes those changes that have already been implemented in the *NTIA Manual*)		
Affected Rule	Change	Remarks
§ 2.105(d)	Deleted part of heading	Deleted "and the Rule Part Cross Reference Column" because cross references are now described in § 2.105(e).
§ 2.105(d)(5)(iv)	Revised "following" to read "followed"	Revised rule reads as follows: "Any footnote consisting of the letter "G" followed by one or more digits…"
§ 2.106 (corrections to the Allocation Table):		
1605-1615 kHz, Federal Table	Added missing Federal footnote	NTIA requests that footnote G127 (which implements a long-standing agreement concerning TIS station use of 1610 kHz) be added to the list of Federal footnotes and that a reference to G127 be added to the Federal Table.
9400-9500 kHz, U.S. Table	Deleted 5.147	In the *Below 28 MHz R&O*, the Commission adopted US367 to provide for Federal fixed service use of the band 9400-9500 kHz on a non-interference basis, and thus, the more general international footnote is unneeded.
10100-10150 kHz, non-Federal Table	Corrected footnote placement	Moved the reference to footnote US247 from the bottom of the cell to the right of AMATEUR.
25005-2850 kHz, U.S. Table		Moved reference to footnote US285 from the bottom of the cell to the right of Federal MOBILE and to the right of non-Federal MOBILE except aeronautical mobile.
806-890 MHz, Region 2 Table*	Added two missing footnote references to the International Table	Reference to footnote 5.317A is added to the right of "MOBILE."
862-890 MHz, Region 1 Table*		Reference to footnote 5.317A is added to the right of "MOBILE except aeronautical mobile."
2310-2360 MHz, U.S. Table	Corrected footnote placement	Footnotes 5.396 and US327 are placed at the bottom of the cell because these footnotes apply to two services (*i.e.*, the BSS and the broadcasting service).
2310-2360 MHz, Federal Table	Deleted reference to footnote G120	Footnote G120 applies only to the band 2360-2390 MHz.
Numerous bands; see Remarks	Listed services in French alphabetic order	Per § 2.104(h)(3), primary and secondary services in the International Table are listed in French alphabetic order. For consistency, services in the U.S. Table are also listed in French alphabetic order. In the U.S. Table: 525-535 kHz and 608-614 MHz. In the Federal Table: 1240-1300 MHz, 2700-2900 MHz, and 43.5-45.5 GHz. In the non-Federal Table: 1240-1300 MHz, 2310-2320 MHz, 2345-2360 MHz, 2390-2395 MHz, 3100-3300 MHz, 10-10.5 GHz, 13.75-14 GHz, 17.2-17.3 GHz, 25.05-25.25 GHz, 41-42.5 GHz, and 46.9-47 GHz.
5250-5255 MHz, non-Federal Table	Deleted footnote	Because footnote 5.558A does not apply to the band 5250-5255 MHz, the footnote reference is deleted from the non-Federal Table.
8400-8450 MHz, U.S. Table	Placed deep space limitation before directional indicator	Consistent with ITU *Radio Regulations*, revised "SPACE RESEARCH (space-to-Earth) (deep space only)" in the Federal Table to read "SPACE RESEARCH (deep space) (space-to-Earth)." In the non-Federal Table, revised "Space research (space-to-Earth) (deep space only)" to read "Space research (deep space) (space-to-Earth)."

Appendix A: Additional Changes Not Specifically Described in the Text (cont.) (* denotes those changes that have already been implemented in the *NTIA Manual*)		
Affected Rule	Change	Remarks
§ 2.106 (corrections to the Allocation Table):		
13.4-13.75 GHz, Federal Table*	Deleted active limitation	"SPACE RESEARCH (active) 5.501A" was corrected to read "SPACE RESEARCH 5.501A." The active limitation was not requested by NTIA and is inconsistent with footnote 5.501A, which permits other space research uses on a secondary basis.
22.21-22.5 GHz, U.S. Table	Listed footnotes in numeric order	The footnotes at the bottom of the cell that represents the band 22.21-22.5 GHz were not listed in numeric order. Therefore, these footnotes are now shown as "US263 US342."
§ 2.106 (changes to footnote text):		
5.155	Revised "services" to read "service"	Revised footnote reads as follows: "…the band 21850-21870 kHz is also allocated to the aeronautical mobile (R) service on a primary basis."
5.237	Revised "Somali" to read "Somalia"	Revised footnote reads as follows: "in…Somalia…, the band 174-223 MHz is also allocated to the fixed and mobile services on a secondary basis."
5.339, 5.438, 5.462A, 5.469A, 5.476A	Revised "earth" to read "Earth"	The ITU capitalizes the word "Earth" in the term "Earth exploration-satellite service." Also added missing degree symbols to 5.462A.
US90	Revised "services" to read "service"	Revised footnote reads as follows: "…from a space station in the space operation, Earth exploration-satellite, or space research service…"
US93*	Revised "not" to read "nor"	The last sentence reads as follows: "VOR test facilities operating on 108 MHz will not be protected against interference caused by FM broadcasting stations operating in the band 88-108 MHz nor shall the authorization…"
US99*	Updated address	Revised footnote reads as follows: "…to the Electromagnetic Management Unit, Room 1030, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230."[105]
US116	Deleted expired grandfathering clause	Deleted the second sentence, which read as follows: "Federal assignments [in the bands 890-902 MHz and 935-941 MHz] existing prior to July 10, 1970 to stations in Alaska may be continued."
US201	Corrected "power flux" to read "power flux-density"	Revised the last sentence of the footnote to read as follows: "The power flux-density produced at the Earth's surface by any space station in this band shall not exceed -152 dBW/m²/4 kHz."
US117, US346	Style	Removed the word "footnote."
US216	Changed "are" to "is" and "transmitting" to "operating at"	Revised the first sentence in paragraphs (a) and (b) to read as follows: (a) The use of the frequencies 150.775 MHz and 150.790 MHz is limited to mobile stations operating with a maximum e.r.p. of 100 watts. (b) The use of the frequencies 152.0075 MHz and 163.250 MHz is limited to base stations…
US259	Clarity	Revised "are restricted to operating powers of" to read "shall operate with an e.i.r.p. of "
US265*	Added space	Revised "-3dBW" to read "-3 dBW"
US273, US290, US323, US335, NG53, NG56, NG144, NG160	Placed "band" before the specific frequency band instead of after it	Consistent with ITU *Radio Regulations.*

[105] *See* letter from Associate Administrator, Office of Spectrum Management, NTIA, to Chief, OET, dated April 19, 2006.

Appendix A: Additional Changes Not Specifically Described in the Text (cont.) (* denotes those changes that have already been implemented in the *NTIA Manual*)		
Affected Rule	Change	Remarks
§ 2.106 (changes to footnote text):		
US285	Revised "frequency" to read "frequencies"	Revised footnote reads as follows: "Under exceptional circumstances, the carrier frequencies 2635 kHz, 2638 kHz, and 2738 kHz may be authorized to coast stations."
US308	Restructured footnote	Revised "In the frequency bands … MHz, the Aeronautical-Mobile- Satellite (R) requirements that cannot be accommodated in the 1545-1549.5 MHz, … bands" to read "In the bands … MHz, those requirements of the aeronautical mobile-satellite (R) service that cannot be accommodated in the bands 1545-1549.5 MHz, …"
US309	Listed band first	In the first sentence, changed "Transmissions in the bands 1545-1559 MHz" to read "In the band 1545-1559 MHz, transmissions." In the second sentence, took similar action.
US310	Used abbreviation	In the third sentence, introduced "power flux-density as "(pfd)" and used the abbreviation in the fourth sentence.
US315, NG149, and NG158	Changed "frequency band" to read "band"	Consistent with ITU *Radio Regulations*.
US316	Placed "Federal" in the allocation sentence.	Changed "… allocated on a primary basis to the meteorological aids service. Operations in this service are limited to Federal Next …" to read "… allocated to the meteorological aids service on a primary basis for Federal use. Operations in this service are limited to Next …"
US324	Listed band first	Changed "Federal and non-Federal satellite systems in the 400.15-401 MHz band …" to read "In the band 400.15-401 MHz, Federal and non-Federal satellite systems …"
US342	Corrected "43.17" to read "42.87"	Consistent with footnote 5.149, revised the band "42.77-43.17 GHz" to read "42.77-42.87 GHz," which is a band that is used for spectral line observations.[106]
US397*	Added "the" before "United States"	Revised the second sentence to read as follows: "Stations in the Earth exploration-satellite service (active) shall not be operated within line-of-sight of the United States..."
US399	Added effective date and used consistent terminology	Replaced: (1) "[effective date of this order]" with "November 13, 2006" (twice); (2) replaced "47 CFR §" with "47 CFR;" (3) "Federal Government" with "Federal;" and (4) "non-Federal Government" with "non-Federal."
NG143	Added "No."	Changed "ITU Radio Regulation 5.488" and "5.488" to read "ITU Radio Regulation No. 5.488" and "No. 5.488"
NG175	Simplified	Revised to read "In the band 38.6-40 GHz, television pickup stations that were authorized on or before…"
G2 and G31	Merged G31 into G2	Both footnotes limit Federal use of the radiolocation service to the military services, so merging the two serves to simplify the Federal Table. Footnote G2 is amended by adding the phrase "3300-3500 MHz (except as provided by footnote US108)," and the now unneeded footnote G31 is deleted.
G133*	Deleted mobile service	The band 7190-7235 MHz is not allocated to the mobile service in the U.S. Second sentence revised to read as follows: "Geostationary satellites in the space research service operating in the band 7190-7235 MHz shall not claim protection from existing and future stations in the fixed service and ITU Radio Regulation No. 5.43A…"[107]

[106] *See* letter from Associate Administrator, Office of Spectrum Management, NTIA, to Chief, OET, received November 23, 2004.

[107] *See* letter from Associate Administrator, Office of Spectrum Management, NTIA, to (Acting) Chief, OET, dated September 8, 2005.

Appendix B: Updates to the FCC Rule Part Cross References in Column 6 of the Allocation Table			
Existing Band(s)	Effect on Rule Part Cross Reference(s)	Rule/Reason	Result
160-190 kHz, 200-275 kHz	Deleted "Aviation (87)" from 160-190 kHz & added it to 200-275 kHz	Not listed in § 87.173	Aviation (87) is listed for the band 190-275 kHz
435-495 kHz	Added "Aviation (87)"	457 kHz listed in § 87.173b	Maritime (80) and Aviation (87) are listed for the band 405-505 kHz
535-1705 kHz	Deleted "Auxiliary Broadcasting (74)" Added "Private Land Mobile (90)"	Not listed in Part 74 § 90.242	TIS cross reference corrected
2194-2495 kHz, 74.6-74.8 MHz	Deleted "Aviation (87)"	Not listed in § 87.173	
5900-5950 kHz, 9400-9500 kHz	Deleted "Maritime (80)"	§ 2.106, footnote US366 (WARC-92 HFBC transition period has concluded)	Bands not available to new non-Federal stations in the maritime service
26100-26480 kHz	Added "Low Power Auxiliary (74H)"	§ 74.802(a)	
54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz, 614-806 MHz	Replaced "Auxiliary Broadcasting (74)" with "LPTV, TV Translator/Booster (74G)" and "Low Power Auxiliary (74H)"	§§ 74.702(a), 74.802(a)	Specific subparts are listed.
75.4-76 MHz, 328.6-335.4 MHz, 2700-2900 MHz, 5460-5470 MHz, 8650-9000 MHz, 9300-9500 MHz	Added "Aviation (87)"	§ 87.173b	
88-108 MHz	Replaced "Auxiliary Broadcasting (74)" with "FM Translator/ Booster (74L)"	§ 74.1202	Specific subpart is listed.
152.855-154 MHz, 157.45-161.575 MHz, 162.0125-173.2 MHz	Replaced "Auxiliary Broadcasting (74)" with "Remote Pickup (74D)"	§ 74.402(a); 166.25 MHz and 170.15 MHz authorized per US11	Specific subpart is listed.
161.625-161.775 MHz, 450-451 MHz, 455-456 MHz	Replaced "Auxiliary Broadcasting (74)" with "Low Power Auxiliary (74H)"	§ 74.802(a)	Specific subpart is listed.
406-406.1 MHz	Added "Maritime (80)," "Aviation (87)," and "Personal Radio (95)"	Emergency beacons on ships (Part 80, Subpart V), in aircraft (§§ 87.173(b), 87.193-87.199) & on land (Part 95, Subpart K)	
698-763 MHz, 775-793 MHz, 805-806 MHz	Deleted "Private Land Mobile (90)"	Not listed in Part 90	
805-806 MHz	Added "Wireless Communications (27)"	Recently added to § 27.5(b)	
941-944 MHz	Added "Aural Broadcast Auxiliary (74E)"	§ 74.502(a), note 1	Recognizes use in Puerto Rico
944-952 MHz	Replaced "Auxiliary Broadcasting (74)" with "Aural Broadcast Auxiliary (74E)" and "Low Power Auxiliary (74H)"	§§ 74.502(a), 74.802(a)	Specific subparts are listed.

Appendix B: Updates to the FCC Rule Part Cross References in Column 6 of the Allocation Table (cont.)			
Existing Band(s)	Effect on Rule Part Cross Reference(s)	Rule/Reason	Result
2025-2110 MHz, 2450-2483.5 MHz, 6425-6525 MHz, 6875-7125 MHz, 12.7-13.25 GHz, 17.7-18.3 GHz, 19.3-19.7 GHz	Replaced "TV Auxiliary Broadcasting (74F)," "Auxiliary Broadcasting (74)," and "Auxiliary Broadcast (74)" with "TV Broadcast Auxiliary (74F)"	Better parallels the title of Part 74, Subpart F, which is "Television Broadcast Auxiliary Stations." See § 74.602(a), (g) and (i) for the frequencies.	Specific subpart is listed.
5000-5030 MHz	Deleted "Satellite Communications (25)"	Not listed in § 25.202	"Satellite Communications (25)" is listed in the band 5030-5250 MHz
5460-5470 MHz	Added "Maritime (80)"	§ 80.375(d)	
8500-10000 MHz	Added "Private Land Mobile (90)"	§ 90.103(b)	
9200-9500 MHz	Added "Maritime (80)"	§§ 80.375, 80.1077	Recognizes use by GMDSS radar transponders
12.7-12.75 GHz and 25.25-27.5 GHz	Deleted "Satellite Communications (25)"	Not listed in § 25.202(a)(1)	
37-39.5 GHz and 42-42.5 GHz	Deleted "Fixed Microwave (101)" from 37-38.6 GHz and 42-42.5 GHz; and added it to 39.5-40 GHz	§§ 101.101, 101.147; see para. (v) for the band 38.6-40 GHz	"Fixed Microwave (101)" is listed in the band 38.6-40 GHz
37.5-39.5 GHz and 40-42 GHz	Added "Satellite Communications (25)" to the band 39.5-40 GHz	§ 25.202(a)(1)	"Satellite Communications (25)" is listed in the band 37.5-42 GHz
76-77.5 GHz	Deleted "RF Devices (15)" from 77-77.5 GHz	Not listed in §15.253	"RF Devices (15)" is listed in the band 76-77 GHz

Appendix C: Final Rules

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 C.F.R. parts 1, 2, 25, 73, 74, 90, and 97 as follows:

PART 1—PRACTICE AND PROCEDURE

1. The authority citation for part 1 continues to read as follows:

AUTHORITY: 15 U.S.C. 79 et seq.; 47 U.S.C. 151, 154(i), 154(j), 155, 157, 225, 303(r), and 309.

2. Section 1.924 is amended by revising paragraph (g)(1) to read as follows:

§ 1.924 Quiet zones.

* * * * *

(g) * * *

(1) Applicants and licensees planning to construct and operate a new or modified station within the area bounded by a circle with a radius of 100 kilometers (62.1 miles) that is centered on 37° 56' 44" N, 75° 27' 37" W (Wallops Island) or 64° 58' 22" N, 147° 30' 04" W (Fairbanks) or within the area bounded by a circle with a radius of 65 kilometers (40.4 miles) that is centered on 39° 00' 02" N, 76° 50' 29" W (Greenbelt) must notify the National Oceanic and Atmospheric Administration (NOAA) of the proposed operation. For this purpose, NOAA maintains the GOES coordination web page at http://www.osd.noaa.gov/radio/frequency.htm, which provides the technical parameters of the earth stations and the point-of-contact for the notification. The notification shall include the following information: requested frequency, geographical coordinates of the antenna location, antenna height above mean sea level, antenna directivity, emission type, equivalent isotropically radiated power, antenna make and model, and transmitter make and model.

* * * * *

PART 2 – FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

3. The authority citation for part 2 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

4. Section 2.1 is amended by adding the terms “conterminous United States” and “insular area” in alphabetical order and by correctly the term “Radiolocation Mobil Station” to read “Radiolocation Mobile Station.”

§ 2.1 Terms and definitions.

* * * * *

(c) * * *

* * * * *

Conterminous United States. The contiguous 48 States and the District of Columbia. (FCC)

* * * * *

Insular Area. A jurisdiction that is neither a part of one of the several States nor a Federal district. The U.S. insular areas are listed in 47 CFR 2.105(a) at notes 2 and 3. (FCC)

* * * * *

Radiolocation Mobile Station. * * *

* * * * *

5. Section 2.105 is amended by revising paragraphs (a), (b), (d)(5)(iv), and (f); by adding new paragraph (d)(6); and by revising the heading to paragraph (d) to read as follows:

§ 2.105 United States Table of Frequency Allocations.

(a) The United States Table of Frequency Allocations (United States Table) is subdivided into the Federal Table of Frequency Allocations (Federal Table, column 4 of § 2.106) and the non-Federal Table of Frequency Allocations (non-Federal Table, column 5 of § 2.106). The United States Table is based on the Region 2 Table because the relevant area of jurisdiction is located primarily in Region 2 [1] (i.e., the 50 States, the District of Columbia, the Caribbean insular areas,[2] and some of the Pacific insular areas).[3] The Federal Table is administered by NTIA [4] and the non-Federal Table is administered by the Federal Communications Commission (FCC).[5]

[1] See 2.104(b) for definitions of the ITU Regions.

[2] The operation of stations in the U.S. insular areas located in Region 2 is generally governed by the United States Table. The U.S. insular areas located in Region 2 are comprised of the Caribbean insular areas and two of the eleven Pacific insular areas. The Caribbean insular areas are Puerto Rico, the United States Virgin Islands, and Navassa Island. The Pacific insular areas located in Region 2 are Johnston Atoll and Midway Atoll.

[3] The operation of stations in the Pacific insular areas located in Region 3 is generally governed by the Region 3 Table (i.e., column 3 of 2.106). The Pacific insular areas located in Region 3 are American Samoa, Guam, the Northern Mariana Islands, Baker Island, Howland Island, Jarvis Island, Kingman Reef, Palmyra Island, and Wake Island.

[4] Section 305(a) of the Communications Act of 1934, as amended. See Public Law 102-538, 106 Stat. 3533 (1992).

[5] The Communications Act of 1934, as amended.

(b) In the United States, radio spectrum may be allocated to either Federal or non-Federal use exclusively, or for shared use. In the case of shared use, the type of service(s) permitted need not be the same [e.g., Federal FIXED, non-Federal MOBILE]. The terms used to designate categories of services and allocations [6] in columns 4 and 5 of § 2.106 correspond to the terms in the ITU Radio Regulations.

[6] The radio services are defined in 47 CFR 2.1.

* * * * *

(d) Format of the United States Table. (1) * * *

* * * * *

(5) * * *

* * * * *

(iv) Any footnote consisting of the letter "G" followed by one or more digits, e.g., G2, denotes a stipulation applicable only to Federal operations. * * *

(6) The coordinates of latitude and longitude that are listed in United States, Federal, and non-Federal footnotes are referenced to the North American Datum of 1983 (NAD 83).

* * * * *

(f) The FCC Online Table of Frequency Allocations is updated shortly after a final rule that amends § 2.106 is released. The address for the FCC Radio Spectrum Home Page, which includes the FCC Online Table and the FCC Allocation History File, is *http://www.fcc.gov/oet/spectrum*.

6. Section 2.106, the Table of Frequency Allocations, is amended as follows:

a. Revise all pages.

b. In the list of international footnotes, revise footnotes 5.155, 5.237, 5.339, 5.438, 5.462A, 5.469A, and 5.476A.

c. In the list of United States (US) footnotes: (1) add footnote US1; (2) revise footnotes US7, US11, US81, US90, US93, US99, US116, US117, US201, US216, US217, US222, US229, US230, US247, US251, US252, US259, US262, US265, US267, US273, US285, US290, US294, US299, US301, US307, US308, US309, US310, US311, US315, US316, US323, US324, US334, US335, US337, US338, US342, US344, US346, US348, US351, US353, US354, US355, US359, US360, US362, US366, US368, US378, US381, US388, US396, US397, US399, and US401; and (3) remove footnotes US215, US302, US321, and US387.

d. In the list of non-Federal Government (NG) footnotes: (1) add footnotes NG1 and NG30; (2) revise footnotes NG28, NG51, NG53, NG56, NG66, NG112, NG124, NG141, NG143, NG144, NG147, NG149, NG155, NG158, NG159, NG160, NG163, NG167, NG172, NG173, NG175, and NG184; and (3) remove footnote NG31.

e. In the list of Federal Government (G) footnotes: (1) revise footnotes G2, G6, and G133; (2) remove footnotes G31 and G106; and (3) add footnote G127.

§ 2.106 Table of Frequency Allocations.

The revisions and additions read as follows:

* * * * *

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
Below 9 (Not Allocated) 5.53 5.54			Below 9 (Not Allocated) 5.53 5.54		
9-14 RADIONAVIGATION			9-14 RADIONAVIGATION US18 US294		
14-19.95 FIXED MARITIME MOBILE 5.57 5.55 5.56			14-19.95 FIXED MARITIME MOBILE 5.57 US294	14-19.95 Fixed US294	
19.95-20.05 STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)			19.95-20.05 STANDARD FREQUENCY AND TIME SIGNAL (20 kHz) US294		
20.05-70 FIXED MARITIME MOBILE 5.57 5.56 5.58			20.05-59 FIXED MARITIME MOBILE 5.57 US294	20.05-59 FIXED US294	
			59-61 STANDARD FREQUENCY AND TIME SIGNAL (60 kHz) US294		
			61-70 FIXED MARITIME MOBILE 5.57 US294	61-70 FIXED US294	
70-72 RADIONAVIGATION 5.60	70-90 FIXED MARITIME MOBILE 5.57 MARITIME RADIONAVIGATION 5.60 Radiolocation	70-72 RADIONAVIGATION 5.60 Fixed Maritime mobile 5.57 5.59	70-90 FIXED MARITIME MOBILE 5.57 Radiolocation	70-90 FIXED Radiolocation	Private Land Mobile (90)
72-84 FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56		72-84 FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60			
84-86 RADIONAVIGATION 5.60		84-86 RADIONAVIGATION 5.60 Fixed Maritime mobile 5.57 5.59			
86-90 FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	5.61	86-90 FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60	US294	US294	

90-110 RADIONAVIGATION 5.62 Fixed 5.64			90-110 RADIONAVIGATION 5.62 US18 US104 US294	Aviation (87) Private Land Mobile (90)
110-112 FIXED MARITIME MOBILE RADIONAVIGATION 5.64	110-130 FIXED MARITIME MOBILE MARITIME RADIONAVIGATION 5.60 Radiolocation	110-112 FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	110-130 FIXED MARITIME MOBILE Radiolocation	Maritime (80) Private Land Mobile (90)
112-115 RADIONAVIGATION 5.60		112-117.6 RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.65		
115-117.6 RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.66				
117.6-126 FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64		117.6-126 FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64		
126-129 RADIONAVIGATION 5.60		126-129 RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64 5.65		
129-130 FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	5.61 5.64	129-130 FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	5.64 US294	
130-148.5 FIXED MARITIME MOBILE 5.64 5.67	130-160 FIXED MARITIME MOBILE 5.64	130-160 FIXED MARITIME MOBILE RADIONAVIGATION 5.64	130-160 FIXED MARITIME MOBILE 5.64 US294	Maritime (80)
148.5-255 BROADCASTING	160-190 FIXED	160-190 FIXED Aeronautical radionavigation	160-190 FIXED MARITIME MOBILE US294	160-190 FIXED US294	
	190-200 AERONAUTICAL RADIONAVIGATION		190-200 AERONAUTICAL RADIONAVIGATION US18 US226 US294	Aviation (87)
5.68 5.69 5.70 255-283.5 BROADCASTING AERONAUTICAL RADIONAVIGATION 5.70 5.71	200-275 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	200-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	200-275 AERONAUTICAL RADIONAVIGATION US18 Aeronautical mobile US294	

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
(See previous page)	275-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons)	(See previous page)	275-285 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons) US18 US294		Aviation (87)
283.5-315 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.72 5.74	285-315 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73		285-325 MARITIME RADIONAVIGATION (radiobeacons) 5.73 Aeronautical radionavigation (radiobeacons)		
315-325 AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73 5.72 5.75	315-325 MARITIME RADIONAVIGATION (radiobeacons) 5.73 Aeronautical radionavigation	315-325 AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73	US18 US294 US364		
325-405 AERONAUTICAL RADIONAVIGATION 5.72	325-335 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Maritime radionavigation (radiobeacons)	325-405 AERONAUTICAL RADIONAVIGATION Aeronautical mobile	325-335 AERONAUTICAL RADIONAVIGATION (radiobeacons) Aeronautical mobile Maritime radionavigation (radiobeacons) US18 US294		Aviation (87)
	335-405 AERONAUTICAL RADIONAVIGATION Aeronautical mobile		335-405 AERONAUTICAL RADIONAVIGATION (radiobeacons) US18 Aeronautical mobile US294		
405-415 RADIONAVIGATION 5.76 5.72	405-415 RADIONAVIGATION 5.76 Aeronautical mobile		405-415 RADIONAVIGATION 5.76 US18 Aeronautical mobile US294		Maritime (80) Aviation (87)
415-435 MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION 5.72	415-495 MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.80		415-435 MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION US294		
435-495 MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.72 5.82	5.77 5.78 5.82		435-495 MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.82 US231 US294	435-495 MARITIME MOBILE 5.79 5.79A 5.82 US231 US294	
495-505 MOBILE (distress and calling) 5.83			495-505 MOBILE (distress and calling) 5.83		
505-526.5 MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION 5.72	505-510 MARITIME MOBILE 5.79	505-526.5 MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION Aeronautical mobile Land mobile	505-510 MARITIME MOBILE 5.79		Maritime (80)
	510-525 MOBILE 5.79A 5.84 AERONAUTICAL RADIONAVIGATION		510-525 MARITIME MOBILE (ships only) 5.79A 5.84 AERONAUTICAL RADIONAVIGATION (radiobeacons) US18 US14 US225		Maritime (80) Aviation (87)

526.5-1606.5 BROADCASTING	525-535 BROADCASTING 5.86 AERONAUTICAL RADIONAVIGATION	526.5-535 BROADCASTING Mobile 5.88	525-535 MOBILE US221 AERONAUTICAL RADIONAVIGATION (radiobeacons) US18 US239		Aviation (87) Private Land Mobile (90)
	535-1605 BROADCASTING	535-1606.5 BROADCASTING	535-1605	535-1605 BROADCASTING NG1 NG128	Radio Broadcast (AM)(73) Alaska Fixed (80) Private Land Mobile (90)
5.87 5.87A	1605-1625 BROADCASTING 5.89	1606.5-1800 FIXED MOBILE RADIOLOCATION RADIONAVIGATION	1605-1615 MOBILE US221 G127	1605-1705 BROADCASTING 5.89	
1606.5-1625 FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	5.90		1615-1705 US299	US299 NG1 NG128	
1625-1635 RADIOLOCATION 5.93	1625-1705 FIXED MOBILE BROADCASTING 5.89 Radiolocation 5.90				
1635-1800 FIXED MARITIME MOBILE 5.90 LAND MOBILE	1705-1800 FIXED MOBILE RADIOLOCATION AERONAUTICAL RADIONAVIGATION		1705-1800 FIXED MOBILE RADIOLOCATION US240		Maritime (80) Private Land Mobile (90)
5.92 5.96		5.91			
1800-1810 RADIOLOCATION 5.93	1800-1850 AMATEUR	1800-2000 AMATEUR FIXED MOBILE except aeronautical mobile RADIONAVIGATION Radiolocation	1800-1900	1800-1900 AMATEUR	Amateur (97)
1810-1850 AMATEUR 5.98 5.99 5.100 5.101					
1850-2000 FIXED MOBILE except aeronautical mobile	1850-2000 AMATEUR FIXED MOBILE except aeronautical mobile RADIOLOCATION RADIONAVIGATION		1900-2000 RADIOLOCATION		Private Land Mobile (90) Amateur (97)
5.92 5.96 5.103	5.102	5.97	US290		
2000-2025 FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	2000-2065 FIXED MOBILE		2000-2065 FIXED MOBILE	2000-2065 MARITIME MOBILE NG19	Maritime (80)
2025-2045 FIXED MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103			US340	US340	

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
2045-2160 FIXED MARITIME MOBILE LAND MOBILE 5.92	(See previous page)		(See previous page)		
	2065-2107 MARITIME MOBILE 5.105 5.106		2065-2107 MARITIME MOBILE 5.105 US296 US340		Maritime (80)
2160-2170 RADIOLOCATION 5.93 5.107	2107-2170 FIXED MOBILE		2107-2170 FIXED MOBILE US340	2107-2170 FIXED MOBILE except aeronautical mobile NG19 US340	Maritime (80) Private Land Mobile (90)
2170-2173.5 MARITIME MOBILE			2170-2173.5 MARITIME MOBILE (telephony) US340	2170-2173.5 MARITIME MOBILE US340	Maritime (80)
2173.5-2190.5 MOBILE (distress and calling) 5.108 5.109 5.110 5.111			2173.5-2190.5 MOBILE (distress and calling) 5.108 5.109 5.110 5.111 US279 US340		Maritime (80) Aviation (87)
2190.5-2194 MARITIME MOBILE			2190.5-2194 MARITIME MOBILE (telephony) US340	2190.5-2194 MARITIME MOBILE US340	Maritime (80)
2194-2300 FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.112	2194-2300 FIXED MOBILE 5.112		2194-2495 FIXED MOBILE	2194-2495 FIXED MOBILE except aeronautical mobile NG19	Maritime (80) Private Land Mobile (90)
2300-2498 FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	2300-2495 FIXED MOBILE BROADCASTING 5.113		US340	US340	
2498-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	2495-2501 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)		2495-2505 STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)		
2501-2502 STANDARD FREQUENCY AND TIME SIGNAL Space research					
2502-2625 FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.114	2502-2505 STANDARD FREQUENCY AND TIME SIGNAL		US1 US340		
2625-2650 MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	2505-2850 FIXED MOBILE		2505-2850 FIXED MOBILE US285	2505-2850 FIXED MOBILE except aeronautical mobile US285	Maritime (80) Aviation (87) Private Land Mobile (90)
2650-2850 FIXED MOBILE except aeronautical mobile (R) 5.92 5.103			US340	US340	

2850-3025 AERONAUTICAL MOBILE (R) 5.111 5.115			2850-3025 AERONAUTICAL MOBILE (R) 5.111 5.115 US283 US340		Aviation (87)
3025-3155 AERONAUTICAL MOBILE (OR)			3025-3155 AERONAUTICAL MOBILE (OR) US340		
3155-3200 FIXED MOBILE except aeronautical mobile (R) 5.116 5.117			3155-3230 FIXED MOBILE except aeronautical mobile (R)		Maritime (80) Private Land Mobile (90)
3200-3230 FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116			US340		
3230-3400 FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118			3230-3400 FIXED MOBILE except aeronautical mobile Radiolocation US340		Maritime (80) Aviation (87) Private Land Mobile (90)
3400-3500 AERONAUTICAL MOBILE (R)			3400-3500 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
3500-3800 AMATEUR FIXED MOBILE except aeronautical mobile 5.92	3500-3750 AMATEUR 5.119	3500-3900 AMATEUR FIXED MOBILE	3500-4000	3500-4000 AMATEUR	Amateur (97)
3800-3900 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	3750-4000 AMATEUR FIXED MOBILE except aeronautical mobile (R)				
3900-3950 AERONAUTICAL MOBILE (OR) 5.123		3900-3950 AERONAUTICAL MOBILE BROADCASTING			
3950-4000 FIXED BROADCASTING		3950-4000 FIXED BROADCASTING			
	5.122 5.125	5.126	US340	US340	
4000-4063 FIXED MARITIME MOBILE 5.127 5.126			4000-4063 FIXED MARITIME MOBILE US340		Maritime (80)
4063-4438 MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128 5.129			4063-4438 MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 US82 US296 US340		Maritime (80) Aviation (87)

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
4438-4650 FIXED MOBILE except aeronautical mobile (R)		4438-4650 FIXED MOBILE except aeronautical mobile	4438-4650 FIXED MOBILE except aeronautical mobile (R) US340		Maritime (80) Aviation (87) Private Land Mobile (90)
4650-4700 AERONAUTICAL MOBILE (R)			4650-4700 AERONAUTICAL MOBILE (R) US282 US283 US340		Aviation (87)
4700-4750 AERONAUTICAL MOBILE (OR)			4700-4750 AERONAUTICAL MOBILE (OR) US340		
4750-4850 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	4750-4850 FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113	4750-4850 FIXED BROADCASTING 5.113 Land mobile	4750-4850 FIXED MOBILE except aeronautical mobile (R) US340		Maritime (80) Private Land Mobile (90)
4850-4995 FIXED LAND MOBILE BROADCASTING 5.113			4850-4995 FIXED MOBILE US340	4850-4995 FIXED US340	Aviation (87) Private Land Mobile (90)
4995-5003 STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)			4995-5005 STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)		
5003-5005 STANDARD FREQUENCY AND TIME SIGNAL Space research			US1 US340		
5005-5060 FIXED BROADCASTING 5.113			5005-5060 FIXED US340		Maritime (80) Aviation (87) Private Land Mobile (90)
5060-5250 FIXED Mobile except aeronautical mobile 5.133			5060-5450 FIXED Mobile except aeronautical mobile		Maritime (80) Aviation (87) Private Land Mobile (90) Amateur (97)
5250-5450 FIXED MOBILE except aeronautical mobile			US212 US340 US381		
5450-5480 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	5450-5480 AERONAUTICAL MOBILE (R)	5450-5480 FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	5450-5680 AERONAUTICAL MOBILE (R)		Aviation (87)
5480-5680 AERONAUTICAL MOBILE (R) 5.111 5.115			5.111 5.115 US283 US340		
5680-5730 AERONAUTICAL MOBILE (OR) 5.111 5.115			5680-5730 AERONAUTICAL MOBILE (OR) 5.111 5.115 US340		

5730-5900 FIXED LAND MOBILE	5730-5900 FIXED MOBILE except aeronautical mobile (R)	5730-5900 FIXED Mobile except aeronautical mobile (R)	5730-5900 FIXED MOBILE except aeronautical mobile (R) US340		Maritime (80) Aviation (87) Private Land Mobile (90)
5900-5950 BROADCASTING 5.134 5.136			5900-5950 BROADCASTING 5.134 US340 US366		Radio Broadcast (HF)(73)
5950-6200 BROADCASTING			5950-6200 BROADCASTING US340		
6200-6525 MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137			6200-6525 MARITIME MOBILE 5.109 5.110 5.130 5.132 US82 US296 US340		Maritime (80)
6525-6685 AERONAUTICAL MOBILE (R)			6525-6685 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
6685-6765 AERONAUTICAL MOBILE (OR)			6685-6765 AERONAUTICAL MOBILE (OR) US340		
6765-7000 FIXED MOBILE except aeronautical mobile (R) 5.138 5.138A 5.139			6765-7000 FIXED MOBILE except aeronautical mobile (R) 5.138 US340 US394		ISM Equipment (18) Private Land Mobile (90)
7000-7100 AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A			7000-7100 US340	7000-7100 AMATEUR AMATEUR-SATELLITE US340	Amateur (97)
7100-7200 AMATEUR 5.141A 5.141B 5.141C 5.142			7100-7300 US340 US395	7100-7300 AMATEUR 5.142 US340 US395	Radio Broadcast (HF)(73) Amateur (97)
7200-7300 BROADCASTING	7200-7300 AMATEUR 5.142	7200-7300 BROADCASTING			
7300-7400 BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D			7300-7400 BROADCASTING 5.134 US340 US366 US396		Radio Broadcast (HF)(73) Maritime (80) Private Land Mobile (90)
7400-7450 BROADCASTING 5.143B 5.143C	7400-7450 FIXED MOBILE except aeronautical mobile (R)	7400-7450 BROADCASTING 5.143A 5.143C	7400-8100 FIXED MOBILE except aeronautical mobile (R)		Radio Broadcast (HF)(73) Maritime (80) Aviation (87) Private Land Mobile (90)
7450-8100 FIXED MOBILE except aeronautical mobile (R) 5.143E 5.144			US340		

International Table			United States Table		FCC Rule Part(s)
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8100-8195 FIXED MARITIME MOBILE			8100-8195 FIXED MARITIME MOBILE US340		Maritime (80)
8195-8815 MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111			8195-8815 MARITIME MOBILE 5.109 5.110 5.132 5.145 US82 5.111 US296 US340		Maritime (80) Aviation (87)
8815-8965 AERONAUTICAL MOBILE (R)			8815-8965 AERONAUTICAL MOBILE (R) US340		Aviation (87)
8965-9040 AERONAUTICAL MOBILE (OR)			8965-9040 AERONAUTICAL MOBILE (OR) US340		
9040-9400 FIXED			9040-9400 FIXED US340		Maritime (80) Private Land Mobile (90)
9400-9500 BROADCASTING 5.134 5.146			9400-9500 BROADCASTING 5.134 US340 US366		Radio Broadcast (HF)(73)
9500-9900 BROADCASTING 5.147			9500-9900 BROADCASTING US340 US367		
9900-9995 FIXED			9900-9995 FIXED US340		Private Land Mobile (90)
9995-10003 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz) 5.111			9995-10005 STANDARD FREQUENCY AND TIME SIGNAL (10000 kHz)		
10003-10005 STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111			5.111 US1 US340		
10005-10100 AERONAUTICAL MOBILE (R) 5.111			10005-10100 AERONAUTICAL MOBILE (R) 5.111 US283 US340		Aviation (87)
10100-10150 FIXED Amateur			10100-10150 US247 US340	10100-10150 AMATEUR US247 US340	Amateur (97)
10150-11175 FIXED Mobile except aeronautical mobile (R)			10150-11175 FIXED Mobile except aeronautical mobile (R) US340		Private Land Mobile (90)

11175-11275 AERONAUTICAL MOBILE (OR)	11175-11275 AERONAUTICAL MOBILE (OR) US340		
11275-11400 AERONAUTICAL MOBILE (R)	11275-11400 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
11400-11600 FIXED	11400-11600 FIXED US340		Private Land Mobile (90)
11600-11650 BROADCASTING 5.134 5.146	11600-11650 BROADCASTING 5.134 US340 US366		Radio Broadcast (HF)(73)
11650-12050 BROADCASTING 5.147	11650-12050 BROADCASTING US340 US367		
12050-12100 BROADCASTING 5.134 5.146	12050-12100 BROADCASTING 5.134 US340 US366		
12100-12230 FIXED	12100-12230 FIXED US340		Private Land Mobile (90)
12230-13200 MARITIME MOBILE 5.109 5.110 5.132 5.145	12230-13200 MARITIME MOBILE 5.109 5.110 5.132 5.145 US82 US296 US340		Maritime (80)
13200-13260 AERONAUTICAL MOBILE (OR)	13200-13260 AERONAUTICAL MOBILE (OR) US340		
13260-13360 AERONAUTICAL MOBILE (R)	13260-13360 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
13360-13410 FIXED RADIO ASTRONOMY 5.149	13360-13410 RADIO ASTRONOMY US342 G115	13360-13410 RADIO ASTRONOMY US342	
13410-13570 FIXED Mobile except aeronautical mobile (R) 5.150	13410-13570 FIXED Mobile except aeronautical mobile (R) 5.150 US340	13410-13570 FIXED 5.150 US340	ISM Equipment (18) Private Land Mobile (90)
13570-13600 BROADCASTING 5.134 5.151	13570-13600 BROADCASTING 5.134 US340 US366		Radio Broadcast (HF)(73)

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
13600-13800 BROADCASTING			13600-13800 BROADCASTING US340		Radio Broadcast (HF)(73)
13800-13870 BROADCASTING 5.134 5.151			13800-13870 BROADCASTING 5.134 US340 US366		
13870-14000 FIXED Mobile except aeronautical mobile (R)			13870-14000 FIXED Mobile except aeronautical mobile (R) US340	13870-14000 FIXED US340	Private Land Mobile (90)
14000-14250 AMATEUR AMATEUR-SATELLITE			14000-14350	14000-14250 AMATEUR AMATEUR-SATELLITE US340	Amateur (97)
14250-14350 AMATEUR 5.152			US340	14250-14350 AMATEUR US340	
14350-14990 FIXED Mobile except aeronautical mobile (R)			14350-14990 FIXED Mobile except aeronautical mobile (R) US340	14350-14990 FIXED US340	Private Land Mobile (90)
14990-15005 STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz) 5.111			14990-15010 STANDARD FREQUENCY AND TIME SIGNAL (15000 kHz)		
15005-15010 STANDARD FREQUENCY AND TIME SIGNAL Space research			5.111 US1 US340		
15010-15100 AERONAUTICAL MOBILE (OR)			15010-15100 AERONAUTICAL MOBILE (OR) US340		
15100-15600 BROADCASTING			15100-15600 BROADCASTING US340		Radio Broadcast (HF)(73)
15600-15800 BROADCASTING 5.134 5.146			15600-15800 BROADCASTING 5.134 US340 US366		
15800-16360 FIXED 5.153			15800-16360 FIXED US340		Private Land Mobile (90)

16360-17410 MARITIME MOBILE 5.109 5.110 5.132 5.145	16360-17410 MARITIME MOBILE 5.109 5.110 5.132 5.145 US82 US296 US340		Maritime (80)
17410-17480 FIXED	17410-17480 FIXED US340		Private Land Mobile (90)
17480-17550 BROADCASTING 5.134 5.146	17480-17550 BROADCASTING 5.134 US340 US366		Radio Broadcast (HF)(73)
17550-17900 BROADCASTING	17550-17900 BROADCASTING US340		
17900-17970 AERONAUTICAL MOBILE (R)	17900-17970 AERONAUTICAL MOBILE (R) US283 US340		Aviation (87)
17970-18030 AERONAUTICAL MOBILE (OR)	17970-18030 AERONAUTICAL MOBILE (OR) US340		
18030-18052 FIXED	18030-18068 FIXED		Maritime (80) Private Land Mobile (90)
18052-18068 FIXED Space research	US340		
18068-18168 AMATEUR AMATEUR-SATELLITE 5.154	18068-18168 US340	18068-18168 AMATEUR AMATEUR-SATELLITE US340	Amateur (97)
18168-18780 FIXED Mobile except aeronautical mobile	18168-18780 FIXED Mobile US340		Maritime (80) Private Land Mobile (90)
18780-18900 MARITIME MOBILE	18780-18900 MARITIME MOBILE US82 US296 US340		Maritime (80)
18900-19020 BROADCASTING 5.134 5.146	18900-19020 BROADCASTING 5.134 US340 US366		Radio Broadcast (HF)(73)
19020-19680 FIXED	19020-19680 FIXED US340		Private Land Mobile (90)
19680-19800 MARITIME MOBILE 5.132	19680-19800 MARITIME MOBILE 5.132 US340		Maritime (80)

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
19800-19990 FIXED			19800-19990 FIXED US340		Private Land Mobile (90)
19990-19995 STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111			19990-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz)		
19995-20010 STANDARD FREQUENCY AND TIME SIGNAL (20000 kHz) 5.111			5.111 US1 US340		
20010-21000 FIXED Mobile			20010-21000 FIXED Mobile US340	20010-21000 FIXED US340	Private Land Mobile (90)
21000-21450 AMATEUR AMATEUR-SATELLITE			21000-21450 US340	21000-21450 AMATEUR AMATEUR-SATELLITE US340	Amateur (97)
21450-21850 BROADCASTING			21450-21850 BROADCASTING US340		Radio Broadcast (HF)(73)
21850-21870 FIXED 5.155A 5.155			21850-21924 FIXED US340		Aviation (87) Private Land Mobile (90)
21870-21924 FIXED 5.155B					
21924-22000 AERONAUTICAL MOBILE (R)			21924-22000 AERONAUTICAL MOBILE (R) US340		Aviation (87)
22000-22855 MARITIME MOBILE 5.132 5.156			22000-22855 MARITIME MOBILE 5.132 US82 US296 US340		Maritime (80)
22855-23000 FIXED 5.156			22855-23000 FIXED US340		Private Land Mobile (90)
23000-23200 FIXED Mobile except aeronautical mobile (R) 5.156			23000-23200 FIXED Mobile except aeronautical mobile (R) US340	23000-23200 FIXED US340	
23200-23350 FIXED 5.156A AERONAUTICAL MOBILE (OR)			23200-23350 AERONAUTICAL MOBILE (OR) US340		

23350-24000 FIXED MOBILE except aeronautical mobile 5.157	23350-24890 FIXED MOBILE except aeronautical mobile	23350-24890 FIXED	Private Land Mobile (90)
24000-24890 FIXED LAND MOBILE	US340	US340	
24890-24990 AMATEUR AMATEUR-SATELLITE	24890-24990 US340	24890-24990 AMATEUR AMATEUR-SATELLITE US340	Amateur (97)
24990-25005 STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)	24990-25010 STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)		
25005-25010 STANDARD FREQUENCY AND TIME SIGNAL Space research	US1 US340		
25010-25070 FIXED MOBILE except aeronautical mobile	25010-25070 US340	25010-25070 LAND MOBILE US340 NG112	Private Land Mobile (90)
25070-25210 MARITIME MOBILE	25070-25210 MARITIME MOBILE US82 US281 US296 US340	25070-25210 MARITIME MOBILE US82 US281 US296 US340 NG112	Maritime (80) Private Land Mobile (90)
25210-25550 FIXED MOBILE except aeronautical mobile	25210-25330 US340	25210-25330 LAND MOBILE US340	Private Land Mobile (90)
	25330-25550 FIXED MOBILE except aeronautical mobile US340	25330-25550 US340	
25550-25670 RADIO ASTRONOMY 5.149	25550-25670 RADIO ASTRONOMY US74 US342		
25670-26100 BROADCASTING	25670-26100 BROADCASTING US25 US340		Radio Broadcast (HF)(73) Remote Pickup (74D)
26100-26175 MARITIME MOBILE 5.132	26100-26175 MARITIME MOBILE 5.132 US25 US340		Remote Pickup (74D) Low Power Auxiliary (74H) Maritime (80)
26175-27500 FIXED MOBILE except aeronautical mobile	26175-26480 US340	26175-26480 LAND MOBILE US340	Remote Pickup (74D) Low Power Auxiliary (74H)
	26480-26950 FIXED MOBILE except aeronautical mobile US340	26480-26950 US340	
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International Table			United States Table		FCC Rule Part(s)
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(See previous page)			26.95-27.41	26.95-26.96 FIXED 5.150 US340	ISM Equipment (18)
				26.96-27.23 MOBILE except aeronautical mobile 5.150 US340	ISM Equipment (18) Personal Radio (95)
				27.23-27.41 FIXED MOBILE except aeronautical mobile	ISM Equipment (18) Private Land Mobile (90) Personal Radio (95)
			5.150 US340	5.150 US340	
27.5-28 METEOROLOGICAL AIDS FIXED MOBILE			27.41-27.54 US340	27.41-27.54 FIXED LAND MOBILE US340	Private Land Mobile (90)
			27.54-28 FIXED MOBILE US298 US340	27.54-28 US298 US340	
28-29.7 AMATEUR AMATEUR-SATELLITE			28-29.89	28-29.7 AMATEUR AMATEUR-SATELLITE US340	Amateur (97)
29.7-30.005 FIXED MOBILE				29.7-29.8 LAND MOBILE US340	Private Land Mobile (90)
				29.8-29.89 FIXED	
			US340	US340	
			29.89-29.91 FIXED MOBILE US340	29.89-29.91 US340	
			29.91-30 US340	29.91-30 FIXED US340	
30.005-30.01 SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH			30-30.56 FIXED MOBILE	30-30.56	
30.01-37.5 FIXED MOBILE					

	30.56-32	30.56-32 FIXED LAND MOBILE NG124	Private Land Mobile (90)
	32-33 FIXED MOBILE	32-33	
	33-34	33-34 FIXED LAND MOBILE NG124	Private Land Mobile (90)
	34-35 FIXED MOBILE	34-35	
	35-36	35-36 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
	36-37 FIXED MOBILE US220	36-37 US220	
	37-37.5	37-37.5 LAND MOBILE NG124	Private Land Mobile (90)
37.5-38.25 FIXED MOBILE Radio astronomy 5.149	37.5-38 Radio astronomy US342	37.5-38 LAND MOBILE Radio astronomy US342 NG59 NG124	
	38-38.25 FIXED MOBILE RADIO ASTRONOMY US81 US342	38-38.25 RADIO ASTRONOMY US81 US342	
38.25-39.986 FIXED MOBILE	38.25-39 FIXED MOBILE	38.25-39	
	39-40	39-40 LAND MOBILE NG124	Private Land Mobile (90)
39.986-40.02 FIXED MOBILE Space research	40-42 FIXED MOBILE	40-42	ISM Equipment (18) Private Land Mobile (90)
40.02-40.98 FIXED MOBILE 5.150	5.150 US210 US220	5.150 US210 US220	

International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
40.98-41.015 FIXED MOBILE Space research 5.160 5.161			(See previous page)		
41.015-44 FIXED MOBILE 5.160 5.161			42-46.6	42-43.69 FIXED LAND MOBILE NG124 NG141	Public Mobile (22) Private Land Mobile (90)
				43.69-46.6 LAND MOBILE NG124 NG141	Private Land Mobile (90)
44-47 FIXED MOBILE 5.162 5.162A			46.6-47 FIXED MOBILE	46.6-47	
47-68 BROADCASTING	47-50 FIXED MOBILE	47-50 FIXED MOBILE BROADCASTING 5.162A	47-49.6	47-49.6 LAND MOBILE NG124	Private Land Mobile (90)
			49.6-50 FIXED MOBILE	49.6-50	
	50-54 AMATEUR 5.162A 5.166 5.167 5.168 5.170		50-73	50-54 AMATEUR	Amateur (97)
5.162A 5.163 5.164 5.165 5.169 5.171	54-68 BROADCASTING Fixed Mobile 5.172	54-68 FIXED MOBILE BROADCASTING 5.162A		54-72 BROADCASTING NG115 NG128 NG142 NG149	Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
68-74.8 FIXED MOBILE except aeronautical mobile	68-72 BROADCASTING Fixed Mobile 5.173	68-74.8 FIXED MOBILE			
	72-73 FIXED MOBILE			72-73 FIXED MOBILE NG3 NG49 NG56	Public Mobile (22) Aviation (87) Private Land Mobile (90) Personal Radio (95)
	73-74.6 RADIO ASTRONOMY 5.178		73-74.6 RADIO ASTRONOMY US74 US246		
	74.6-74.8 FIXED MOBILE		74.6-74.8 FIXED MOBILE US273		Private Land Mobile (90)
5.149 5.174 5.175 5.177 5.179		5.149 5.176 5.179			

74.8-75.2 AERONAUTICAL RADIONAVIGATION 5.180 5.181			74.8-75.2 AERONAUTICAL RADIONAVIGATION 5.180		Aviation (87)
75.2-87.5 FIXED MOBILE except aeronautical mobile	75.2-75.4 FIXED MOBILE 5.179		75.2-75.4 FIXED MOBILE US273		Private Land Mobile (90)
	75.4-76 FIXED MOBILE	75.4-87 FIXED MOBILE 5.182 5.183 5.188	75.4-88	75.4-76 FIXED MOBILE NG3 NG49 NG56	Public Mobile (22) Aviation (87) Private Land Mobile (90) Personal Radio (95)
5.175 5.179 5.184 5.187	76-88 BROADCASTING Fixed Mobile 5.185	87-100 FIXED MOBILE BROADCASTING		76-88 BROADCASTING NG115 NG128 NG142 NG149	Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
87.5-100 BROADCASTING 5.190	88-100 BROADCASTING		88-108 US93	88-108 BROADCASTING NG2 US93 NG128	Broadcast Radio (FM)(73) FM Translator/Booster (74L)
100-108 BROADCASTING 5.192 5.194					
108-117.975 AERONAUTICAL RADIONAVIGATION 5.197 5.197A			108-117.975 AERONAUTICAL RADIONAVIGATION US93 US343		Aviation (87)
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			121.9375-123.0875 5.198 US30 US31 US33 US80 US102 US213	121.9375-123.0875 AERONAUTICAL MOBILE 5.198 US30 US31 US33 US80 US102 US213	
			123.0875-123.5875 AERONAUTICAL MOBILE 5.198 5.200 US32 US33 US112		
			123.5875-128.8125 AERONAUTICAL MOBILE (R) 5.198 US26		
			128.8125-132.0125 5.198	128.8125-132.0125 AERONAUTICAL MOBILE (R) 5.198	
			132.0125-136 AERONAUTICAL MOBILE (R) 5.198 US26		
5.111 5.198 5.199 5.200 5.201 5.202 5.203 5.203A 5.203B			136-137 US244	136-137 AERONAUTICAL MOBILE (R) US244	

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137.025-137.175 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208			137.025-137.175 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) US319 US320 5.208		
137.175-137.825 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208			137.175-137.825 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) US319 US320 SPACE RESEARCH (space-to-Earth) 5.208		
137.825-138 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208			137.825-138 SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) US319 US320 5.208		
138-143.6 AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	138-143.6 FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	138-143.6 FIXED MOBILE Space research (space-to-Earth) 5.207 5.213	138-144 FIXED MOBILE	138-144	
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143.65-144 AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	143.65-144 FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	143.65-144 FIXED MOBILE Space research (space-to-Earth) 5.207 5.213	G30		

144-146 AMATEUR AMATEUR-SATELLITE 5.216			144-148	144-146 AMATEUR AMATEUR-SATELLITE	Amateur (97)
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148-149.9 FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	148-149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221		148-149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) US319 US320 US323 US325 5.218 5.219 G30	148-149.9 MOBILE-SATELLITE (Earth-to-space) US319 US320 US323 US325 5.218 5.219	Satellite Communications (25)
149.9-150.05 MOBILE-SATELLITE (Earth-to-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.224B 5.220 5.222 5.223			149.9-150.05 MOBILE-SATELLITE (Earth-to-space) US319 US320 RADIONAVIGATION-SATELLITE 5.223		
150.05-153 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	150.05-156.7625 FIXED MOBILE		150.05-150.8 FIXED MOBILE US216 G30	150.05-150.8 US216	
			150.8-152.855 US216	150.8-152.855 FIXED LAND MOBILE NG4 NG51 NG112 US216 NG124	Public Mobile (22) Private Land Mobile (90) Personal Radio (95)
153-154 FIXED MOBILE except aeronautical mobile (R) Meteorological aids			152.855-156.2475	152.855-154 LAND MOBILE NG4 NG124	Remote Pickup (74D) Private Land Mobile (90)
154-156.7625 FIXED MOBILE except aeronautical mobile (R) 5.226 5.227	5.225 5.226 5.227			154-156.2475 FIXED LAND MOBILE NG112 5.226 NG117 NG124 NG148	Maritime (80) Private Land Mobile (90) Personal Radio (95)
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			157.1875-161.575	157.1875-157.45 MOBILE except aeronautical mobile US266 5.226 NG111	Maritime (80) Aviation (87) Private Land Mobile (90)
				157.45-161.575 FIXED LAND MOBILE NG28 NG111 NG112 5.226 NG6 NG70 NG124 NG148 NG155	Public Mobile (22) Remote Pickup (74D) Maritime (80) Private Land Mobile (90)
			161.575-161.625 5.226 US77	161.575-161.625 MARITIME MOBILE US77 5.226 NG6 NG17	Public Mobile (22) Maritime (80)
			161.625-161.775	161.625-161.775 LAND MOBILE NG6 5.226	Public Mobile (22) Remote Pickup (74D) Low Power Auxiliary (74H)
			161.775-162.0125 5.226 US266 US399	161.775-162.0125 MOBILE except aeronautical mobile US266 NG6 5.226 US399	Public Mobile (22) Maritime (80) Private Land Mobile (90)
			162.0125-173.2 FIXED US13 MOBILE 5.226 US8 US11 US216 US300 US312 US399 G5	162.0125-173.2 5.226 US8 US11 US13 US216 US300 US312 US399	Remote Pickup (74D) Maritime (80) Private Land Mobile (90)
			173.2-173.4	173.2-173.4 FIXED Land mobile	Private Land Mobile (90)
5.226 5.229	5.226 5.230 5.231 5.232		173.4-174 FIXED MOBILE G5	173.4-174	

174-223 BROADCASTING	174-216 BROADCASTING Fixed Mobile 5.234	174-223 FIXED MOBILE BROADCASTING	174-216	174-216 BROADCASTING NG115 NG128 NG142 NG149	Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
	216-220 FIXED MARITIME MOBILE Radiolocation 5.241 5.242		216-217 Fixed Land mobile Radiolocation 5.241 G2 US210 US229	216-219 FIXED MOBILE except aeronautical mobile US210 US229 NG173	Maritime (80) Private Land Mobile (90) Personal Radio (95)
			217-220 Fixed Mobile US210 US229	219-220 FIXED MOBILE except aeronautical mobile Amateur NG152 US210 US229 NG173	Maritime (80) Private Land Mobile (90) Amateur (97)
	220-225 AMATEUR FIXED MOBILE Radiolocation 5.241		220-222 FIXED LAND MOBILE Radiolocation 5.241 G2 US335	220-222 FIXED LAND MOBILE US335	Private Land Mobile (90)
5.235 5.237 5.243		5.233 5.238 5.240 5.245	222-225 Radiolocation 5.241 G2	222-225 AMATEUR	Amateur (97)
223-230 BROADCASTING Fixed Mobile 5.243 5.246 5.247	225-235 FIXED MOBILE	223-230 FIXED MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION Radiolocation 5.250	225-235 FIXED MOBILE	225-235	
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235-267 FIXED MOBILE 5.111 5.199 5.252 5.254 5.256 5.256A			235-267 FIXED MOBILE 5.111 5.199 5.256 G27 G100	235-267 5.111 5.199 5.256	

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273-312 FIXED MOBILE 5.254					
312-315 FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255					
315-322 FIXED MOBILE 5.254			G27 G100		
322-328.6 FIXED MOBILE RADIO ASTRONOMY 5.149			322-328.6 FIXED MOBILE US342 G27	322-328.6 US342	
328.6-335.4 AERONAUTICAL RADIONAVIGATION 5.258 5.259			328.6-335.4 AERONAUTICAL RADIONAVIGATION 5.258		Aviation (87)
335.4-387 FIXED MOBILE 5.254			335.4-399.9 FIXED MOBILE	335.4-399.9	
387-390 FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.254 5.255					
390-399.9 FIXED MOBILE 5.254			G27 G100		

399.9-400.05 MOBILE-SATELLITE (Earth-to-space) 5.209 5.224A RADIONAVIGATION-SATELLITE 5.222 5.224B 5.260 5.220	399.9-400.05 MOBILE-SATELLITE (Earth-to-space) US319 US320 RADIONAVIGATION-SATELLITE 5.260		Satellite Communications (25)
400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261 5.262	400.05-400.15 STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261		
400.15-401 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.262 5.264	400.15-401 METEOROLOGICAL AIDS (radiosonde) US70 METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) US319 US320 US324 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.264	400.15-401 METEOROLOGICAL AIDS (radiosonde) US70 MOBILE-SATELLITE (space-to-Earth) US319 US320 US324 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.264	Satellite Communications (25)
401-402 METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	401-402 METEOROLOGICAL AIDS (radiosonde) US70 SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) US384	401-402 METEOROLOGICAL AIDS (radiosonde) US70 SPACE OPERATION (space-to-Earth) Earth exploration-satellite (Earth-to-space) Meteorological-satellite (Earth-to-space) US384	
402-403 METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	402-403 METEOROLOGICAL AIDS (radiosonde) US70 EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) US345 US384	402-403 METEOROLOGICAL AIDS (radiosonde) US70 Earth exploration-satellite (Earth-to-space) Meteorological-satellite (Earth-to-space) US345 US384	Personal Radio (95)
403-406 METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	403-406 METEOROLOGICAL AIDS (radiosonde) US70 US345 G6	403-406 METEOROLOGICAL AIDS (radiosonde) US70 US345	
406-406.1 MOBILE-SATELLITE (Earth-to-space) 5.266 5.267	406-406.1 MOBILE-SATELLITE (Earth-to-space) 5.266 5.267		Maritime (80) Aviation (87) Personal Radio (95)
406.1-410 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	406.1-410 FIXED US13 MOBILE RADIO ASTRONOMY US74 US117 G5 G6	406.1-410 RADIO ASTRONOMY US74 US13 US117	Private Land Mobile (90)

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420-430 FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271			420-450 RADIOLOCATION US217 G2 G129	420-450 Amateur US7 NG135	Private Land Mobile (90) Amateur (97)
430-432 AMATEUR RADIOLOCATION 5.271 5.272 5.273 5.274 5.275 5.276 5.277	430-432 RADIOLOCATION Amateur 5.271 5.276 5.277 5.278 5.279				
432-438 AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.272 5.276 5.277 5.280 5.281 5.282	432-438 RADIOLOCATION Amateur Earth exploration-satellite (active) 5.279A 5.271 5.276 5.277 5.278 5.279 5.281 5.282				
438-440 AMATEUR RADIOLOCATION 5.271 5.273 5.274 5.275 5.276 5.277 5.283	438-440 RADIOLOCATION Amateur 5.271 5.276 5.277 5.278 5.279				
440-450 FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286			5.286 US7 US87 US230 US397 G8	5.282 5.286 US87 US217 US230 US397	
450-455 FIXED MOBILE 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E			450-454 5.286 US87	450-454 LAND MOBILE 5.286 US87 NG112 NG124	Remote Pickup (74D) Low Power Auxiliary (74H) Private Land Mobile (90)
			454-456	454-455 FIXED LAND MOBILE NG12 NG112 NG148	Public Mobile (22) Maritime (80)
455-456 FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E	455-456 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.286A 5.286B 5.286C 5.209	455-456 FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E		455-456 LAND MOBILE	Remote Pickup (74D) Low Power Auxiliary (74H)

456-459 FIXED MOBILE 5.271 5.287 5.288			456-460	456-460 FIXED LAND MOBILE	Public Mobile (22) Maritime (80) Private Land Mobile (90)
459-460 FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E	459-460 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.286A 5.286B 5.286C 5.209	459-460 FIXED MOBILE 5.209 5.271 5.286A 5.286B 5.286C 5.286E	5.287 5.288	5.287 5.288 NG112 NG124 NG148	
460-470 FIXED MOBILE Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 5.290			460-470 Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 US201 US209 US216	460-462.5375 FIXED LAND MOBILE 5.289 US201 US209 NG124	Private Land Mobile (90)
				462.5375-462.7375 LAND MOBILE 5.289 US201	Personal Radio (95)
				462.7375-467.5375 FIXED LAND MOBILE 5.287 5.289 US201 US209 US216 NG124	Private Land Mobile (90)
				467.5375-467.7375 LAND MOBILE 5.287 5.289 US201	Personal Radio (95)
				467.7375-470 FIXED LAND MOBILE 5.288 5.289 US201 US216 NG124	Private Land Mobile (90)
470-790 BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.302 5.304 5.306 5.311 5.312	470-512 BROADCASTING Fixed Mobile 5.292 5.293	470-585 FIXED MOBILE BROADCASTING 5.291 5.298	470-608	470-512 FIXED LAND MOBILE BROADCASTING NG66 NG115 NG128 NG142 NG149	Public Mobile (22) Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H) Private Land Mobile (90)
	512-608 BROADCASTING 5.297	585-610 FIXED MOBILE BROADCASTING RADIONAVIGATION 5.149 5.305 5.306 5.307		512-608 BROADCASTING NG115 NG128 NG142 NG149	Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
	608-614 RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)		608-614 LAND MOBILE (medical telemetry and medical telecommand) RADIO ASTRONOMY US74 US246		Personal (95)
	614-806 BROADCASTING Fixed Mobile 5.293 5.309 5.311	610-890 FIXED MOBILE 5.317A BROADCASTING 5.149 5.305 5.306 5.307 5.311 5.320	614-698	614-698 BROADCASTING NG115 NG128 NG142 NG149	Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)

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				763-775 FIXED MOBILE NG115 NG128 NG142 NG158 NG159	LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H) Private Land Mobile (90R)
				775-793 FIXED MOBILE BROADCASTING NG115 NG128 NG142 NG159	Wireless Communications (27) Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
790-862 FIXED BROADCASTING				793-805 FIXED MOBILE NG115 NG128 NG142 NG158 NG159	LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H) Private Land Mobile (90R)
				805-806 FIXED MOBILE BROADCASTING NG115 NG128 NG142 NG159	Wireless Communications (27) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)
	806-890 FIXED MOBILE 5.317A BROADCASTING			806-809 LAND MOBILE	Private Land Mobile (90)
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				849-851 AERONAUTICAL MOBILE	Public Mobile (22)
5.312 5.314 5.315 5.316 5.319 5.321				851-854 LAND MOBILE	Private Land Mobile (90)
862-890 FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322				854-894 FIXED LAND MOBILE	Public Mobile (22) Private Land Mobile (90)
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890-942 FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation	890-902 FIXED MOBILE except aeronautical mobile 5.317A Radiolocation	890-942 FIXED MOBILE 5.317A BROADCASTING Radiolocation	890-902	894-896 AERONAUTICAL MOBILE US116 US268	Public Mobile (22)
				896-901 FIXED LAND MOBILE US116 US268	Private Land Mobile (90)
				901-902 FIXED MOBILE	Personal Communications (24)
	5.318 5.325		US116 US268 G2	US116 US268	
	902-928 FIXED Amateur Mobile except aeronautical mobile 5.325A Radiolocation		902-928 RADIOLOCATION G59	902-928	ISM Equipment (18) Private Land Mobile (90) Amateur (97)
	5.150 5.325 5.326		5.150 US218 US267 US275 G11	5.150 US218 US267 US275	
	928-942 FIXED MOBILE except aeronautical mobile 5.317A Radiolocation		928-932	928-929 FIXED	Public Mobile (22) Private Land Mobile (90)
				US116 US268 NG120	Fixed Microwave (101)
				929-930 FIXED LAND MOBILE US116 US268	Private Land Mobile (90)
				930-931 FIXED MOBILE US116 US268	Personal Communications (24)
				931-932 FIXED LAND MOBILE	Public Mobile (22)
			US116 US268 G2	US116 US268	
			932-935 FIXED	932-935 FIXED	Public Mobile (22) Fixed Microwave (101)
			US268 G2	US268 NG120	
			935-941	935-940 FIXED LAND MOBILE US116 US268	Private Land Mobile (90)
				940-941 FIXED MOBILE	Personal Communications (24)
5.323	5.325	5.327	US116 US268 G2	US116 US268	

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942-960 FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	942-960 FIXED MOBILE 5.317A	942-960 FIXED MOBILE 5.317A BROADCASTING 5.320	944-960	944-960 FIXED NG120	Public Mobile (22) Aural Broadcast Auxiliary (74E) Low Power Auxiliary (74H) Fixed Microwave (101)
960-1164 AERONAUTICAL RADIONAVIGATION 5.328			960-1164 AERONAUTICAL RADIONAVIGATION 5.328 US224 US400		Aviation (87)
1164-1215 AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A			1164-1215 AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328A US224		
1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332			1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G56 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) G132 SPACE RESEARCH (active) 5.332	1215-1240 Earth exploration-satellite (active) Space research (active)	
1240-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.330 5.331 5.332 5.335 5.335A			1240-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G56 SPACE RESEARCH (active) AERONAUTICAL RADIONAVIGATION 5.332 5.335	1240-1300 AERONAUTICAL RADIONAVIGATION Amateur Earth exploration-satellite (active) Space research (active) 5.282	Amateur (97)
1300-1350 AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A			1300-1350 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation G2 US342	1300-1350 AERONAUTICAL RADIONAVIGATION 5.337 US342	Aviation (87)
1350-1400 FIXED MOBILE RADIOLOCATION	1350-1400 RADIOLOCATION		1350-1390 FIXED MOBILE RADIOLOCATION G2 5.334 5.339 US311 US342 G27 G114	1350-1390 5.334 5.339 US311 US342	

		1390-1395	1390-1392 FIXED MOBILE except aeronautical mobile Fixed-satellite (Earth-to-space) US368 5.339 US311 US342 US351 US398	Wireless Communications (27)
			1392-1395 FIXED MOBILE except aeronautical mobile	
		5.339 US311 US342 US351 US398	5.339 US311 US342 US351 US398	
		1395-1400 LAND MOBILE (medical telemetry and medical telecommand) 5.339 US311 US342 US351 US398		Personal (95)
5.149 5.338 5.339 5.339A	5.149 5.334 5.339 5.339A			
1400-1427 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341		1400-1427 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.341 US246		
1427-1429 SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341		1427-1429.5 LAND MOBILE (medical telemetry and medical telecommand) US350	1427-1429.5 LAND MOBILE (telemetry and telecommand) Fixed (telemetry)	Private Land Mobile (90) Personal (95)
1429-1452 FIXED MOBILE except aeronautical mobile	1429-1452 FIXED MOBILE 5.343	5.341 US352 US398	5.341 US350 US352 US398	
		1429.5-1432	1429.5-1430 FIXED (telemetry and telecommand) LAND MOBILE (telemetry and telecommand) 5.341 US350 US352 US398	
			1430-1432 FIXED (telemetry and telecommand) LAND MOBILE (telemetry and telecommand) Fixed-satellite (space-to-Earth) US368	
		5.341 US350 US352 US398	5.341 US350 US352 US398	
		1432-1435	1432-1435 FIXED MOBILE except aeronautical mobile	Wireless Communications (27)
		5.341 US361	5.341 US361	
5.339A 5.341 5.342	5.339A 5.341			

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1492-1518 FIXED MOBILE except aeronautical mobile 5.341 5.342	1492-1518 FIXED MOBILE 5.343 5.341 5.344	1492-1518 FIXED MOBILE 5.341			
1518-1525 FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.348C 5.341 5.342	1518-1525 FIXED MOBILE 5.343 MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.348C 5.341 5.344	1518-1525 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.348C 5.341	5.341 US78		
1525-1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A Earth exploration-satellite Mobile except aeronautical mobile 5.349 5.341 5.342 5.350 5.351 5.352A 5.354	1525-1530 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354	1525-1530 SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A Earth exploration-satellite Mobile 5.349 5.341 5.351 5.352A 5.354	1525-1535 MOBILE-SATELLITE (space-to-Earth) US315 US380		Satellite Communications (25) Maritime (80)
1530-1535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.342 5.351 5.354	1530-1535 SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A 5.353A Earth exploration-satellite Fixed Mobile 5.343 5.341 5.351 5.354		5.341 5.351		
1535-1559 MOBILE-SATELLITE (space-to-Earth) 5.347A 5.351A 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A			1535-1559 MOBILE-SATELLITE (space-to-Earth) US308 US309 US315 US380 5.341 5.351 5.356		Satellite Communications (25) Maritime (80) Aviation (87)
1559-1610 AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329A 5.341 5.362B 5.362C 5.363			1559-1610 AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.341 US208 US260 US343		Aviation (87)

1610-1610.6 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.363 5.364 5.366 5.367 5.368 5.369 5.371 5.372	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) 5.341 5.364 5.366 5.367 5.368 5.370 5.372	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.372	1610-1610.6 MOBILE-SATELLITE (Earth-to-space) US319 US380 AERONAUTICAL RADIONAVIGATION US260 RADIODETERMINATION-SATELLITE (Earth-to-space) 5.341 5.364 5.366 5.367 5.368 5.372 US208	Satellite Communications (25) Aviation (87)
1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.359 5.363 5.364 5.366 5.367 5.368 5.369 5.371 5.372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) 5.149 5.341 5.364 5.366 5.367 5.368 5.370 5.372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION Radiodetermination-satellite (Earth-to-space) 5.149 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.372	1610.6-1613.8 MOBILE-SATELLITE (Earth-to-space) US319 US380 RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION US260 RADIODETERMINATION-SATELLITE (Earth-to-space) 5.341 5.364 5.366 5.367 5.368 5.372 US208 US342	
1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.347A 5.341 5.355 5.359 5.363 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION RADIODETERMINATION-SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) 5.347A 5.341 5.364 5.365 5.366 5.367 5.368 5.370 5.372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.347A Radiodetermination-satellite (Earth-to-space) 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.372	1613.8-1626.5 MOBILE-SATELLITE (Earth-to-space) US319 US380 AERONAUTICAL RADIONAVIGATION US260 RADIODETERMINATION-SATELLITE (Earth-to-space) Mobile-satellite (space-to-Earth) 5.341 5.364 5.365 5.366 5.367 5.368 5.372 US208	
1626.5-1660 MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376			1626.5-1660 MOBILE-SATELLITE (Earth-to-space) US308 US309 US315 US380 5.341 5.351 5.375	Satellite Communications (25) Maritime (80) Aviation (87)
1660-1660.5 MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A			1660-1660.5 MOBILE-SATELLITE (Earth-to-space) US308 US309 US380 RADIO ASTRONOMY 5.341 5.351 US342	Satellite Communications (25) Aviation (87)
1660.5-1668 RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A			1660.5-1668.4 RADIO ASTRONOMY US74 SPACE RESEARCH (passive)	
1668-1668.4 MOBILE-SATELLITE (Earth-to-space) 5.348C 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A 5.379D			5.341 US246	

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1670-1675 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE 5.380 MOBILE-SATELLITE (Earth-to-space) 5.348C 5.379B 5.341 5.379D 5.379E 5.380A			1670-1675 5.341 US211 US362	1670-1675 FIXED MOBILE except aeronautical mobile 5.341 US211 US362	Wireless Communications (27)
1675-1690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341			1675-1700 METEOROLOGICAL AIDS (radiosonde) METEOROLOGICAL-SATELLITE (space-to-Earth)		
1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	1690-1700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 5.289 5.341 5.381		5.289 5.341 US211		
1700-1710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341		1700-1710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341 5.384	1700-1710 FIXED G118 METEOROLOGICAL-SATELLITE (space-to-Earth) 5.289 5.341	1700-1710 METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed 5.289 5.341	
1710-1930 FIXED MOBILE 5.380 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388			1710-1755 5.341 US311 US378	1710-1755 FIXED MOBILE 5.341 US311 US378	Wireless Communications (27)
			1755-1850 FIXED MOBILE SPACE OPERATION (Earth-to-space) G42	1755-1850	

1930-1970 FIXED MOBILE 5.388A 5.388B 5.388	1930-1970 FIXED MOBILE 5.388A 5.388B Mobile-satellite (Earth-to-space) 5.388	1930-1970 FIXED MOBILE 5.388A 5.388B 5.388	1850-2025	1850-2000 FIXED MOBILE NG177	RF Devices (15) Personal Communications (24) Fixed Microwave (101)
1970-1980 FIXED MOBILE 5.388A 5.388B 5.388					
1980-2010 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F				2000-2020 MOBILE-SATELLITE (Earth-to-space) US380 NG156	Satellite Communications (25)
2010-2025 FIXED MOBILE 5.388A 5.388B 5.388	2010-2025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.388 5.389C 5.389E 5.390	2010-2025 FIXED MOBILE 5.388A 5.388B 5.388		2020-2025 FIXED MOBILE NG177	
2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392			2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) SPACE RESEARCH (Earth-to-space) (space-to-space) 5.391 5.392 US90 US222 US346 US347 US393	2025-2110 FIXED NG118 MOBILE 5.391 5.392 US90 US222 US346 US347 US393	TV Auxiliary Broadcasting (74F) Cable TV Relay (78) Local TV Transmission (101J)
2110-2120 FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388			2110-2120 US252	2110-2120 FIXED MOBILE US252	Public Mobile (22) Wireless Communications (27) Fixed Microwave (101)
2120-2160 FIXED MOBILE 5.388A 5.388B 5.388	2120-2160 FIXED MOBILE 5.388A 5.388B Mobile-satellite (space-to-Earth) 5.388	2120-2170 FIXED MOBILE 5.388A 5.388B	2120-2200	2120-2180 FIXED MOBILE	
2160-2170 FIXED MOBILE 5.388A 5.388B 5.388 5.392A	2160-2170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.388 5.389C 5.389E 5.390	5.388		NG153 NG178	
2170-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F 5.392A				2180-2200 MOBILE-SATELLITE (space-to-Earth) US380 NG168	Satellite Communications (25)

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2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)			2290-2300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	2290-2300 SPACE RESEARCH (deep space) (space-to-Earth)	
2300-2450 FIXED MOBILE Amateur Radiolocation	2300-2450 FIXED MOBILE RADIOLOCATION Amateur		2300-2305 G122	2300-2305 Amateur	Amateur (97)
			2305-2310 US338 G122	2305-2310 FIXED MOBILE except aeronautical mobile RADIOLOCATION Amateur US338	Wireless Communications (27) Amateur (97)
			2310-2320 Fixed Mobile US339 Radiolocation G2 US327	2310-2320 FIXED MOBILE US339 BROADCASTING-SATELLITE RADIOLOCATION 5.396 US327	Wireless Communications (27) Aviation (87)
			2320-2345 Fixed Radiolocation G2 US327	2320-2345 BROADCASTING-SATELLITE 5.396 US327	Satellite Communications (25)
			2345-2360 Fixed Mobile US339 Radiolocation G2 US327	2345-2360 FIXED MOBILE US339 BROADCASTING-SATELLITE RADIOLOCATION 5.396 US327	Wireless Communications (27) Aviation (87)
			2360-2390 MOBILE US276 RADIOLOCATION G2 G120 Fixed	2360-2390 MOBILE US276	Aviation (87)

			2390-2395 MOBILE US276	2390-2395 AMATEUR MOBILE US276	Aviation (87) Amateur (97)
			2395-2400 G122	2395-2400 AMATEUR	Amateur (97)
			2400-2417 5.150 G122	2400-2417 AMATEUR 5.150 5.282	ISM Equipment (18) Amateur (97)
			2417-2450 Radiolocation G2	2417-2450 Amateur	
5.150 5.282 5.395	5.150 5.282 5.393 5.394 5.396		5.150 G124	5.150 5.282	
2450-2483.5 FIXED MOBILE Radiolocation 5.150 5.397	2450-2483.5 FIXED MOBILE RADIOLOCATION 5.150 5.394		2450-2483.5 5.150 US41	2450-2483.5 FIXED MOBILE Radiolocation 5.150 US41	ISM Equipment (18) TV Auxiliary Broadcasting (74F) Private Land Mobile (90) Fixed Microwave (101)
2483.5-2500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A Radiolocation 5.150 5.371 5.397 5.398 5.399 5.400 5.402	2483.5-2500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398 RADIOLOCATION 5.150 5.402	2483.5-2500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIOLOCATION Radiodetermination-satellite (space-to-Earth) 5.398 5.150 5.400 5.402	2483.5-2500 MOBILE-SATELLITE (space-to-Earth) US319 US380 US391 RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398 5.150 5.402 US41	2483.5-2495 MOBILE-SATELLITE (space-to-Earth) US319 US380 RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398 5.150 5.402 US41 NG147 2495-2500 FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) US319 US380 RADIODETERMINATION-SATELLITE (space-to-Earth) 5.398 5.150 5.402 US41 US391 NG147	ISM Equipment (18) Satellite Communications (25) ISM Equipment (18) Satellite Communications (25) Wireless Communications (27)
2500-2520 FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to Earth) 5.351A 5.403 5.405 5.407 5.412 5.414	2500-2520 FIXED 5.409 5.411 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (space-to-Earth) 5.351A 5.403 5.404 5.407 5.414 5.415A		2500-2655	2500-2655 FIXED US205 MOBILE except aeronautical mobile	Wireless Communications (27)
2520-2655 FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.403 5.405 5.412 5.417C 5.417D 5.418B 5.418C	2520-2655 FIXED 5.409 5.411 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.403 5.417C 5.417D 5.418B 5.418C	2520-2535 FIXED 5.409 5.411 FIXED-SATELLITE (space-to-Earth) 5.415 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.403 5.415A 2535-2655 FIXED 5.409 5.411 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.417A 5.417B 5.417C 5.417D 5.418 5.418A 5.418B 5.418C	5.339 US205	5.339	

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2670-2690 FIXED 5.409 5.410 5.411 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412 5.419 5.420	2670-2690 FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.347A 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.419 5.420	2670-2690 FIXED 5.409 5.411 FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.419 5.420 5.420A	US205	US269	
2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422			2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
2700-2900 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424			2700-2900 METEOROLOGICAL AIDS AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation G2 5.423 US18 G15	2700-2900 5.423 US18	Aviation (87)
2900-3100 RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427			2900-3100 RADIOLOCATION 5.424A G56 MARITIME RADIONAVIGATION 5.427 US44 US316	2900-3100 MARITIME RADIONAVIGATION Radiolocation US44 5.427 US316	Maritime (80) Private Land Mobile (90)
3100-3300 RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428			3100-3300 RADIOLOCATION G59 Earth exploration-satellite (active) Space research (active) US342	3100-3300 Earth exploration-satellite (active) Space research (active) Radiolocation US342	Private Land Mobile (90)

3300-3400 RADIOLOCATION 5.149 5.429 5.430	3300-3400 RADIOLOCATION Amateur Fixed Mobile 5.149 5.430	3300-3400 RADIOLOCATION Amateur 5.149 5.429	3300-3500 RADIOLOCATION US108 G2 US342	3300-3500 Amateur Radiolocation US108 5.282 US342	Private Land Mobile (90) Amateur (97)
3400-3600 FIXED FIXED-SATELLITE (space-to-Earth) Mobile Radiolocation 5.431	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile Radiolocation 5.433 5.282 5.432				
	3500-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation 5.433		3500-3650 RADIOLOCATION G59 AERONAUTICAL RADIONAVIGATION (ground-based) G110 US245	3500-3600 Radiolocation 3600-3650 FIXED-SATELLITE (space-to-Earth) US245 Radiolocation	Private Land Mobile (90)
3600-4200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile					
			3650-3700 US348 US349	3650-3700 FIXED FIXED-SATELLITE (space-to-Earth) NG169 NG185 MOBILE except aeronautical mobile US348 US349	Satellite Communications (25) Private Land Mobile (90)
	5.435				
	3700-4200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile		3700-4200	3700-4200 FIXED NG41 FIXED-SATELLITE (space-to-Earth) NG180	International Fixed (23) Satellite Communications (25) Fixed Microwave (101)
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4400-4500 FIXED MOBILE			4400-4500 FIXED MOBILE	4400-4500	
4500-4800 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE			4500-4800 FIXED MOBILE US245	4500-4800 FIXED-SATELLITE (space-to-Earth) 5.441 US245	
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5010-5030 AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B 5.367			5010-5030 AERONAUTICAL RADIONAVIGATION US260 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.443B 5.367 US211 US344		
5030-5150 AERONAUTICAL RADIONAVIGATION 5.367 5.444 5.444A			5030-5250 AERONAUTICAL RADIONAVIGATION US260	5030-5150 AERONAUTICAL RADIONAVIGATION US260 5.367 5.444 5.444A US211 US344	Satellite Communications (25) Aviation (87)
5150-5250 AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.447 5.447B 5.447C			 5.367 5.444 US211 US307 US344	5150-5250 AERONAUTICAL RADIONAVIGATION US260 FIXED-SATELLITE (Earth-to-space) 5.447A US344 5.447C US211 US307	RF Devices (15) Satellite Communications (25) Aviation (87)
5250-5255 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.447E 5.448 5.448A			5250-5255 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G59 SPACE RESEARCH (active) 5.447D 5.448A	5250-5255 Earth exploration-satellite (active) Radiolocation Space research	RF Devices (15) Private Land Mobile (90)
5255-5350 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.447F 5.447E 5.448 5.448A			5255-5350 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G59 SPACE RESEARCH (active) 5.448A	5255-5350 Earth exploration-satellite (active) Radiolocation Space research (active) 5.448A	
5350-5460 EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D			5350-5460 EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION G56 US390 G130	5350-5460 AERONAUTICAL RADIONAVIGATION 5.449 Earth exploration-satellite (active) 5.448B Space research (active) Radiolocation US390	Aviation (87) Private Land Mobile (90)

5460-5470 RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B			5460-5470 RADIONAVIGATION 5.449 US65 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION G56 5.448B US49 G130	5460-5470 RADIONAVIGATION 5.449 US65 Earth exploration-satellite (active) Space research (active) Radiolocation 5.448B US49	Maritime (80) Aviation (87) Private Land Mobile (90)
5470-5570 MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B 5.450 5.451			5470-5570 MARITIME RADIONAVIGATION US65 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION G56 5.448B US50 G131	5470-5570 MARITIME RADIONAVIGATION US65 RADIOLOCATION Earth exploration-satellite (active) Space research (active) US50	RF Devices (15) Maritime (80) Private Land Mobile (90)
5570-5650 MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.450 5.451 5.452			5570-5600 MARITIME RADIONAVIGATION US65 RADIOLOCATION G56 US50 G131 5600-5650 MARITIME RADIONAVIGATION US65 METEOROLOGICAL AIDS RADIOLOCATION G56 5.452 US50 G131	5570-5600 MARITIME RADIONAVIGATION US65 RADIOLOCATION US50 5600-5650 MARITIME RADIONAVIGATION US65 METEOROLOGICAL AIDS RADIOLOCATION 5.452 US50	
5650-5725 MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455			5650-5925 RADIOLOCATION G2	5650-5830 Amateur	RF Devices (15) ISM Equipment (18) Amateur (97)
5725-5830 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455 5.456	5725-5830 RADIOLOCATION Amateur 5.150 5.453 5.455			5.150 5.282	
5830-5850 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455 5.456	5830-5850 RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.453 5.455			5830-5850 Amateur Amateur-satellite (space-to-Earth) 5.150	
5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation 5.150	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation 5.150	5.150 US245	5850-5925 FIXED-SATELLITE (Earth-to-space) US245 MOBILE NG160 Amateur 5.150	ISM Equipment (18) Private Land Mobile (90) Personal Radio (95) Amateur (97)

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			6425-6525	6425-6525 FIXED-SATELLITE (Earth-to-space) MOBILE	TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
			5.440 5.458	5.440 5.458	
			6525-6700	6525-6700 FIXED FIXED-SATELLITE (Earth-to-space)	Fixed Microwave (101)
5.149 5.440 5.458			5.458 US342	5.458 US342	
6700-7075 FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE			6700-7125	6700-6875 FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441	Satellite Communications (25) Fixed Microwave (101)
				5.458 5.458A 5.458B	
				6875-7025 FIXED NG118 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE NG171	Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78)
				5.458 5.458A 5.458B	
				7025-7075 FIXED NG118 FIXED-SATELLITE (Earth-to-space) NG172 MOBILE NG171	TV Broadcast Auxiliary (74F) Cable TV Relay (78)
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7075-7145 FIXED MOBILE				7075-7125 FIXED NG118 MOBILE NG171	
			5.458	5.458	
			7125-7145 FIXED	7125-7190	
5.458 5.459			5.458 G116		
7145-7235 FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460			7145-7190 FIXED SPACE RESEARCH (deep space) (Earth-to-space) US262		
			5.458 G116	5.458 US262	
			7190-7235 FIXED SPACE RESEARCH (Earth-to-space) G133	7190-7235	
5.458 5.459			5.458	5.458	

7235-7250 FIXED MOBILE 5.458	7235-7250 FIXED 5.458	7235-7250 5.458	
7250-7300 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	7250-7300 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Fixed G117	7250-8025	
7300-7450 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	7300-7450 FIXED FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G117		
7450-7550 FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461A	7450-7550 FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G104 G117		
7550-7750 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 	7550-7750 FIXED FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) G117		
7750-7850 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile 	7750-7850 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B		
7850-7900 FIXED MOBILE except aeronautical mobile	7850-7900 FIXED		
7900-8025 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	7900-8025 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Fixed G117		

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8175-8215 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A			8175-8215 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Mobile-satellite (Earth-to-space) (no airborne transmissions) US258 G104 G117		
8215-8400 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A			8215-8400 EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) Mobile-satellite (Earth-to-space) (no airborne transmissions) US258 G117	US258	
8400-8500 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466			8400-8450 FIXED SPACE RESEARCH (deep space) (space-to-Earth)	8400-8450 Space research (deep space) (space-to-Earth)	
			8450-8500 FIXED SPACE RESEARCH (space-to-Earth)	8450-8500 SPACE RESEARCH (space-to-Earth)	
8500-8550 RADIOLOCATION 5.468 5.469			8500-8550 RADIOLOCATION G59	8500-8550 Radiolocation	Private Land Mobile (90)
8550-8650 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A			8550-8650 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G59 SPACE RESEARCH (active)	8550-8650 Earth exploration-satellite (active) Radiolocation Space research (active)	

8650-8750 RADIOLOCATION 5.468 5.469	8650-9000 RADIOLOCATION G59	8650-9000 Radiolocation	Aviation (87) Private Land Mobile (90)
8750-8850 RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471			
8850-9000 RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	US53	US53	
9000-9200 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.471	9000-9200 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation G2 US48 G19	9000-9200 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation US48	
9200-9300 RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474	9200-9300 MARITIME RADIONAVIGATION 5.472 Radiolocation US110 G59 5.474	9200-9300 MARITIME RADIONAVIGATION 5.472 Radiolocation US110 5.474	Maritime (80) Private Land Mobile (90)
9300-9500 RADIONAVIGATION 5.476 Radiolocation 5.427 5.474 5.475	9300-9500 RADIONAVIGATION 5.476 US66 Radiolocation US51 G56 Meteorological aids 5.427 5.474 US67 US71	9300-9500 RADIONAVIGATION 5.476 US66 Radiolocation US51 Meteorological aids 5.427 5.474 US67 US71	Maritime (80) Aviation (87) Private Land Mobile (90)
9500-9800 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	9500-9800 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active)	9500-9800 Earth exploration-satellite (active) Radiolocation Space research (active)	Private Land Mobile (90)
9800-10000 RADIOLOCATION Fixed 5.477 5.478 5.479	9800-10000 RADIOLOCATION 5.479	9800-10000 Radiolocation 5.479	

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10.45-10.5 RADIOLOCATION Amateur Amateur-satellite 5.481			10.45-10.5 RADIOLOCATION G32 US58 US108	10.45-10.5 Amateur Amateur-satellite Radiolocation US58 US108 NG42 NG134	
10.5-10.55 FIXED MOBILE Radiolocation	10.5-10.55 FIXED MOBILE RADIOLOCATION		10.5-10.55 RADIOLOCATION US59		Private Land Mobile (90)
10.55-10.6 FIXED MOBILE except aeronautical mobile Radiolocation			10.55-10.6	10.55-10.6 FIXED	Fixed Microwave (101)
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10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483			10.68-10.7 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246 US355		
10.7-11.7 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 5.484A (Earth-to-space) 5.484 MOBILE except aeronautical mobile	10.7-11.7 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 5.484A MOBILE except aeronautical mobile		10.7-11.7 US211	10.7-11.7 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 US211 US355 NG104 NG182	Satellite Communications (25) Fixed Microwave (101)
11.7-12.5 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE	11.7-12.1 FIXED 5.486 FIXED-SATELLITE (space-to-Earth) 5.484A Mobile except aeronautical mobile 5.485 5.488 12.1-12.2 FIXED-SATELLITE (space-to-Earth) 5.484A 5.485 5.488 5.489	11.7-12.2 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.487 5.487A 5.492	11.7-12.2	11.7-12.2 FIXED-SATELLITE (space-to-Earth) NG143 NG145 NG183 5.488 NG184	Satellite Communications (25)

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12.5-12.75 FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.494 5.495 5.496	12.7-12.75 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile	12.5-12.75 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A MOBILE except aeronautical mobile BROADCASTING-SATELLITE 5.493		12.7-12.75 FIXED NG118 FIXED-SATELLITE (Earth-to-space) MOBILE	TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
12.75-13.25 FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)			12.75-13.25 US251	12.75-13.25 FIXED NG118 FIXED-SATELLITE (Earth-to-space) 5.441 NG104 MOBILE US251 NG53	Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
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13.4-13.75 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.499 5.500 5.501 5.501B			13.4-13.75 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G59 SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.501B	13.4-13.75 Earth exploration-satellite (active) Radiolocation Space research Standard frequency and time signal-satellite (Earth-to-space)	Private Land Mobile (90)
13.75-14 FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.499 5.500 5.501 5.502 5.503			13.75-14 RADIOLOCATION G59 Standard frequency and time signal-satellite (Earth-to-space) Space research US337 US356 US357	13.75-14 FIXED-SATELLITE (Earth-to-space) US337 Standard frequency and time signal-satellite (Earth-to-space) Space research Radiolocation US356 US357	Satellite Communications (25) Private Land Mobile (90)
14-14.25 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504C 5.506A Space research 5.504A 5.505			14-14.2 Space research	14-14.2 FIXED-SATELLITE (Earth-to-space) NG183 Mobile-satellite (Earth-to-space) Space research	Satellite Communications (25)

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14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.506A 5.509A Radionavigation-satellite 5.504A	14.3-14.4 FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.506 5.506B Mobile-satellite (Earth-to-space) 5.506A Radionavigation-satellite 5.504A	14.3-14.4 FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.506A 5.509A Radionavigation-satellite 5.504A			
14.4-14.47 FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.506A 5.509A Space research (space-to-Earth) 5.504A			14.4-14.47 Fixed Mobile	NG184	
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15.7-16.6 RADIOLOCATION 5.512 5.513			15.7-16.6 RADIOLOCATION G59	15.7-17.2 Radiolocation	Private Land Mobile (90)
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17.1-17.2 RADIOLOCATION 5.512 5.513			17.1-17.2 RADIOLOCATION G59		
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	17.8-18.1 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MOBILE		17.8-18.3 FIXED-SATELLITE (space-to-Earth) G117 5.519 US334	17.8-18.3 FIXED 5.519 US334 NG144	TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
18.1-18.4 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B (Earth-to-space) 5.520 MOBILE 5.519 5.521			18.3-18.6 FIXED-SATELLITE (space-to-Earth) G117	18.3-18.6 FIXED-SATELLITE (space-to-Earth) NG164	Satellite Communications (25)
18.4-18.6 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE			US334	US334 NG144	
18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A 5.522C	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.522B MOBILE except aeronautical mobile SPACE RESEARCH (passive) 5.522A	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) US255 G117 SPACE RESEARCH (passive) US254 US334	18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) US255 NG164 SPACE RESEARCH (passive) US254 US334 NG144	
18.8-19.3 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B 5.523A MOBILE			18.8-20.2 FIXED-SATELLITE (space-to-Earth) G117	18.8-19.3 FIXED-SATELLITE (space-to-Earth) NG165 US334 NG144	
19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.523B 5.523C 5.523D 5.523E MOBILE				19.3-19.7 FIXED FIXED-SATELLITE (space-to-Earth) NG166 US334 NG144	Satellite Communications (25) TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
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20.1-20.2 FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528			US334	20.1-20.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.525 5.526 5.527 5.528 US334	

20.2-21.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) 5.524			20.2-21.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) G117	20.2-21.2 Standard frequency and time signal-satellite (space-to-Earth)	
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21.4-22 FIXED MOBILE BROADCASTING-SATELLITE 5.347A 5.530	21.4-22 FIXED MOBILE	21.4-22 FIXED MOBILE BROADCASTING-SATELLITE 5.347A 5.530 5.531	21.4-22 FIXED MOBILE		
22-22.21 FIXED MOBILE except aeronautical mobile 5.149			22-22.21 FIXED MOBILE except aeronautical mobile US342		
22.21-22.5 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532			22.21-22.5 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) US263 US342		
22.5-22.55 FIXED MOBILE			22.5-22.55 FIXED MOBILE US211		
22.55-23.55 FIXED INTER-SATELLITE MOBILE 5.149			22.55-23.55 FIXED INTER-SATELLITE US278 MOBILE US342		Satellite Communications (25) Fixed Microwave (101)
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24-24.05 AMATEUR AMATEUR-SATELLITE 5.150			24-24.05 5.150 US211	24-24.05 AMATEUR AMATEUR-SATELLITE 5.150 US211	ISM Equipment (18) Amateur (97)
24.05-24.25 RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150			24.05-24.25 RADIOLOCATION G59 Earth exploration-satellite (active) 5.150	24.05-24.25 Amateur Earth exploration-satellite (active) Radiolocation 5.150	ISM Equipment (18) Private Land Mobile (90) Amateur (97)
24.25-24.45 FIXED	24.25-24.45 RADIONAVIGATION	24.25-24.45 RADIONAVIGATION FIXED MOBILE	24.25-24.45	24.25-24.45 FIXED	Fixed Microwave (101)
24.45-24.75 FIXED INTER-SATELLITE	24.45-24.65 INTER-SATELLITE RADIONAVIGATION 5.533	24.45-24.65 FIXED INTER-SATELLITE MOBILE RADIONAVIGATION 5.533	24.45-24.65 INTER-SATELLITE RADIONAVIGATION 5.533		Satellite Communications (25)
	24.65-24.75 INTER-SATELLITE RADIOLOCATION-SATELLITE (Earth-to-space)	24.65-24.75 FIXED INTER-SATELLITE MOBILE 5.533	24.65-24.75 INTER-SATELLITE RADIOLOCATION-SATELLITE (Earth-to-space)		
24.75-25.25 FIXED	24.75-25.25 FIXED-SATELLITE (Earth-to-space) 5.535	24.75-25.25 FIXED FIXED-SATELLITE (Earth-to-space) 5.535 MOBILE	24.75-25.05 RADIONAVIGATION	24.75-25.05 FIXED-SATELLITE (Earth-to-space) NG167 RADIONAVIGATION	Satellite Communications (25) Aviation (87)
			25.05-25.25	25.05-25.25 FIXED FIXED-SATELLITE (Earth-to-space) NG167	Satellite Communications (25) Fixed Microwave (101)
25.25-25.5 FIXED INTER-SATELLITE 5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)			25.25-25.5 FIXED INTER-SATELLITE 5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)	25.25-25.5 Inter-satellite 5.536 Standard frequency and time signal-satellite (Earth-to-space)	

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27-27.5 FIXED INTER-SATELLITE 5.536 MOBILE	27-27.5 FIXED FIXED-SATELLITE (Earth-to-space) INTER-SATELLITE 5.536 5.537 MOBILE		27-27.5 FIXED INTER-SATELLITE 5.536 MOBILE	27-27.5 Inter-satellite 5.536	
27.5-28.5 FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE 5.538 5.540			27.5-30	27.5-29.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE	Satellite Communications (25) Fixed Microwave (101)
28.5-29.1 FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.523A 5.539 MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540					
29.1-29.5 FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.523C 5.523E 5.535A 5.539 5.541A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540					
29.5-29.9 FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542	29.5-29.9 FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.525 5.526 5.527 5.529 5.540 5.542	29.5-29.9 FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542		29.5-29.9 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) 5.525 5.526 5.527 5.529	Satellite Communications (25)
29.9-30 FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540 5.542				29.9-30 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) 5.525 5.526 5.527 5.543	

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31-31.3 FIXED 5.543A MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149			31-31.3 Standard frequency and time signal-satellite (space-to-Earth) US211 US342	31-31.3 FIXED MOBILE Standard frequency and time signal-satellite (space-to-Earth) US211 US342	Fixed Microwave (101)
31.3-31.5 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340			31.3-31.8 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
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31.8-32 FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547B 5.548			31.8-32.3 RADIONAVIGATION US69 SPACE RESEARCH (deep space) (space-to-Earth) US262	31.8-32.3 SPACE RESEARCH (deep space) (space-to-Earth) US262	
32-32.3 FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547C 5.548			5.548 US211	5.548 US211	
32.3-33 FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.547D 5.548			32.3-33 INTER-SATELLITE US278 RADIONAVIGATION US69 5.548		Aviation (87)
33-33.4 FIXED 5.547A RADIONAVIGATION 5.547 5.547E			33-33.4 RADIONAVIGATION US69 US360 G117		

33.4-34.2 RADIOLOCATION 5.549	33.4-34.2 RADIOLOCATION US360 G117	33.4-34.2 Radiolocation US360	Private Land Mobile (90)
34.2-34.7 RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	34.2-34.7 RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) US262 US360 G34 G117	34.2-34.7 Radiolocation Space research (deep space) (Earth-to-space) US262 US360	
34.7-35.2 RADIOLOCATION Space research 5.550 5.549	34.7-35.5 RADIOLOCATION	34.7-35.5 Radiolocation	
35.2-35.5 METEOROLOGICAL AIDS RADIOLOCATION 5.549	US360 G117	US360	
35.5-36 METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	35.5-36 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) US360 G117	35.5-36 Earth exploration-satellite (active) Radiolocation Space research (active) US360	
36-37 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149	36-37 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) US263 US342		
37-37.5 FIXED MOBILE SPACE RESEARCH (space-to-Earth) 5.547	37-38 FIXED MOBILE SPACE RESEARCH (space-to-Earth)	37-37.5 FIXED MOBILE	
37.5-38 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547		37.5-38.6 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	Satellite Communications (25)
38-39.5 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth) 5.547	38-38.6 FIXED MOBILE 38.6-39.5	38.6-39.5 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE NG175	Satellite Communications (25) Fixed Microwave (101)

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40-40.5 EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth)			40-40.5 EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) G117	40-40.5 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)	Satellite Communications (25)
40.5-41 FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile 5.547	40.5-41 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B BROADCASTING BROADCASTING-SATELLITE Mobile Mobile-satellite (space-to-Earth) 5.547	40.5-41 FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile 5.547	40.5-41 FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth) US211 G117	40.5-41 FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Fixed Mobile Mobile-satellite (space-to-Earth) US211	
41-42.5 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B BROADCASTING BROADCASTING-SATELLITE Mobile			41-42.5	41-42 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE US211	
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42.5-43.5 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.547			42.5-43.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile RADIO ASTRONOMY US342	42.5-43.5 RADIO ASTRONOMY US342	

43.5-47 MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE		43.5-45.5 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) G117	43.5-45.5	
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5.554		46.9-47 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE 5.554	46.9-47 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE 5.554	
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47.5-47.9 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A MOBILE	47.5-47.9 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE			
47.9-48.2 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A				
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50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Mobile-satellite (Earth-to-space)			50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) G117	50.4-51.4 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space)	
51.4-52.6 FIXED MOBILE 5.547 5.556			51.4-52.6 FIXED MOBILE		
52.6-54.25 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556			52.6-54.25 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) US246		
54.25-55.78 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B			54.25-55.78 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)		
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56.9-57 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557			56.9-57 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE G128 MOBILE 5.558 SPACE RESEARCH (passive) US263	56.9-57 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE 5.558 SPACE RESEARCH (passive) US263	

57-58.2 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	57-58.2 EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) US263		RF Devices (15)
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59.3-64 FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	59.3-64 FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138 US353	59.3-64 FIXED MOBILE 5.558 RADIOLOCATION 5.559 5.138 US353	RF Devices (15) ISM Equipment (18)
64-65 FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	64-65 FIXED INTER-SATELLITE MOBILE except aeronautical mobile	64-65 FIXED MOBILE except aeronautical mobile	
65-66 EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	65-66 EARTH EXPLORATION-SATELLITE FIXED MOBILE except aeronautical mobile SPACE RESEARCH	65-66 EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH	
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74-76 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.559A 5.561			74-76 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Space research (space-to-Earth) US389	74-76 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) US389	
76-77.5 RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149			76-77.5 RADIO ASTRONOMY RADIOLOCATION Space research (space-to-Earth) US342	76-77 RADIO ASTRONOMY RADIOLOCATION Amateur Space research (space-to-Earth) US342	RF Devices (15) Amateur (97)
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77.5-78 AMATEUR AMATEUR-SATELLITE Radio astronomy Space research (space-to-Earth) 5.149			77.5-78 Radio astronomy Space research (space-to-Earth) US342	77.5-78 AMATEUR AMATEUR-SATELLITE Radio astronomy Space research (space-to-Earth) US342	
78-79 RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560			78-79 RADIO ASTRONOMY RADIOLOCATION Space research (space-to-Earth) 5.560 US342	78-79 RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.560 US342	
79-81 RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149			79-81 RADIO ASTRONOMY RADIOLOCATION Space research (space-to-Earth) US342	79-81 RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) US342	

81-84 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth) 5.149 5.561A	81-84 FIXED FIXED-SATELLITE (Earth-to-space) US297 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth) US342 US388 US389		Fixed Microwave (101)
84-86 FIXED FIXED-SATELLITE (Earth-to-space) 5.561B MOBILE RADIO ASTRONOMY 5.149	84-86 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY US342 US388 US389		
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94-94.1 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	94-94.1 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	94-94.1 RADIOLOCATION Radio astronomy 5.562A	RF Devices (15)
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95-100 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	95-100 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554 US342		

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116-119.98 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341			116-122.25 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive)		ISM Equipment (18)
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122.25-123 FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	122.25-123 FIXED INTER-SATELLITE MOBILE 5.558 5.138	122.25-123 FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	ISM Equipment (18) Amateur (97)
123-130 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.562D 5.149 5.554	123-130 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.554 US211 US342		
130-134 EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	130-134 EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.562A US342		
134-136 AMATEUR AMATEUR-SATELLITE Radio astronomy	134-136 Radio astronomy	134-136 AMATEUR AMATEUR-SATELLITE Radio astronomy	Amateur (97)
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141-148.5 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	141-148.5 FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION US342		
148.5-151.5 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	148.5-151.5 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
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158.5-164 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)			158.5-164 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth) US211		
164-167 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340			164-167 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
167-174.5 FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149 5.562D			167-174.5 FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 US211 US342		
174.5-174.8 FIXED INTER-SATELLITE MOBILE 5.558			174.5-174.8 FIXED INTER-SATELLITE MOBILE 5.558		
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182-185 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340			182-185 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) US246		
185-190 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)			185-190 EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)		
190-191.8 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340			190-191.8 EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) US246		

191.8-200 FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	191.8-200 FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.341 5.554 US211 US342	
200-209 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	200-209 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) 5.341 5.563A US246	
209-217 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	209-217 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.341 US342	
217-226 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	217-226 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.341 US342	
226-231.5 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	226-231.5 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) US246	
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235-238 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	235-238 EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	

International Table			United States Table		FCC Rule Part(s)
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240-241 FIXED MOBILE RADIOLOCATION			240-241 FIXED MOBILE RADIOLOCATION		
241-248 RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149			241-248 RADIO ASTRONOMY RADIOLOCATION 5.138 US342	241-248 RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 US342	ISM Equipment (18) Amateur (97)
248-250 AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149			248-250 Radio astronomy US342	248-250 AMATEUR AMATEUR-SATELLITE Radio astronomy US342	Amateur (97)
250-252 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A			250-252 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) 5.563A US246		
252-265 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554			252-265 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554 US211 US342		
265-275 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A			265-275 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.563A US342		
275-1000 (Not allocated) 5.565			275-1000 (Not allocated) 5.565		Amateur (97)

INTERNATIONAL FOOTNOTES

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5.155 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, the Russian Federation, Georgia, Kazakhstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., Tajikistan, Turkmenistan and Ukraine, the band 21850-21870 kHz is also allocated to the aeronautical mobile (R) service on a primary basis.

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5.237 Additional allocation: in Congo (Rep. of the), Eritrea, Ethiopia, Gambia, Guinea, the Libyan Arab Jamahiriya, Malawi, Mali, Sierra Leone, Somalia, Chad and Zimbabwe, the band 174-223 MHz is also allocated to the fixed and mobile services on a secondary basis.

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5.339 The bands 1370-1400 MHz, 2640-2655 MHz, 4950-4990 MHz and 15.20-15.35 GHz are also allocated to the space research (passive) and Earth exploration-satellite (passive) services on a secondary basis.

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5.438 Use of the band 4200-4400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. However, passive sensing in the Earth exploration-satellite and space research services may be authorized in this band on a secondary basis (no protection is provided by the radio altimeters).

* * * * *

5.462A In Regions 1 and 3 (except for Japan), in the band 8025-8400 MHz, the Earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following provisional values for angles of arrival (θ), without the consent of the affected administration:

-174 dB(W/m²) in a 4 kHz band for $0° \leq \theta < 5°$

$-174 + 0.5\,(\theta - 5)$ dB(W/m²) in a 4 kHz band for $5° \leq \theta < 25°$

-164 dB(W/m²) in a 4 kHz band for $25° \leq \theta \leq 90°$

These values are subject to study under Resolution 124 (WRC-97).[6]

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5.469A In the band 8550-8650 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service.

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5.476A In the band 9500-9800 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radionavigation and radiolocation services.

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[6] Note by the Secretariat: This Resolution was revised by WRC-2000.

UNITED STATES (US) FOOTNOTES

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US1 The bands 2501-2502 kHz, 5003-5005 kHz, 10003-10005 kHz, 15005-15010 kHz, 19990-19995 kHz, 20005-20010 kHz, and 25005-25010 kHz are also allocated to the space research service on a secondary basis for Federal use. In the event of interference to the reception of the standard frequency and time broadcasts, these space research transmissions are subject to immediate temporary or permanent shutdown.

US7 In the band 420-450 MHz and within the following areas, the peak envelope power output of a transmitter employed in the amateur service shall not exceed 50 watts, unless expressly authorized by the FCC after mutual agreement, on a case-by-case basis, between the District Director of the applicable field office and the military area frequency coordinator at the applicable military base. For areas (e) through (g), the appropriate military coordinator is located at Peterson AFB, CO.

(a) Arizona, Florida, and New Mexico.

(b) Those portions of California and Nevada that are south of latitude 37° 10' N.

(c) That portion of Texas that is west of longitude 104° W.

(d) Within 322 km (200 miles) of Eglin AFB, FL (30° 30' N, 86° 30' W); Patrick AFB, FL (28° 21' N, 80° 43' W); and the Pacific Missile Test Center, Point Mugu, CA (34° 09' N, 119° 11' W).

(e) Within 240 km (150 miles) of Beale AFB, CA (39° 08' N, 121° 26' W).

(f) Within 200 km (124 miles) of Goodfellow AFB, TX (31° 25' N, 100° 24' W) and Warner Robins AFB, GA (32° 38' N, 83° 35' W).

(g) Within 160 km (100 miles) of Clear, AK (64° 17' N, 149° 10' W); Concrete, ND (48° 43' N, 97° 54' W); and Otis AFB, MA (41° 45' N, 70° 32' W).

* * * * *

US11 On the condition that harmful interference is not caused to present or future Federal stations in the band 162-174 MHz, the frequencies 166.25 MHz and 170.15 MHz may be authorized to non-Federal stations, as follows:

(a) Eligibles in the Public Safety Radio Pool may be authorized to operate in the fixed and land mobile services for locations within 150 miles (241.4 kilometers) of New York City; and

(b) Remote pickup broadcast stations may be authorized to operate in the land mobile service for locations within the conterminous United States, excluding locations within 150 miles of New York City and the Tennessee Valley Authority Area (TVA Area). The TVA Area is bounded on the west by the Mississippi River, on the north by the parallel of latitude 37° 30' N, and on the east and south by that arc of the circle with center at Springfield, IL, and radius equal to the airline distance between Springfield, IL and Montgomery, AL, subtended between the foregoing west and north boundaries.

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US81 The band 38-38.25 MHz is used by both Federal and non-Federal radio astronomy observatories. No new fixed or mobile assignments are to be made and Federal stations in the band 38-38.25 MHz will be moved to other bands on a case-by-case basis, as required, to protect radio astronomy observations from harmful interference. As an exception, however, low powered military transportable and mobile stations used for tactical and training purposes will continue to use the band. To the extent practicable, the latter operations will be adjusted to relieve such interference as may be caused to radio astronomy observations. In the event of harmful interference from such local operations, radio astronomy observatories may contact local military commands directly, with a view to effecting relief. A list of military commands, areas of coordination, and points of contact for purposes of relieving interference may be obtained upon request from the Office of Engineering and Technology, FCC, Washington, DC 20554.

* * * * *

US90 In the band 2025-2110 MHz, the power flux-density at the Earth's surface produced by emissions from a space station in the space operation, Earth exploration-satellite, or space research service that is transmitting in the space-to-space direction, for all conditions and all methods of modulation, shall not exceed the following values in any 4 kHz sub-band:

(a) -154 dBW/m^2 for angles of arrival above the horizontal plane (δ) of 0° to 5°,

(b) -154 + 0.5(δ-5) dBW/m^2 for δ of 5° to 25°, and

(c) -144 dBW/m^2 for δ of 25° to 90°.

US93 In the conterminous United States, the frequency 108.0 MHz may be authorized for use by VOR test facilities, the operation of which is not essential for the safety of life or property, subject to the condition that no interference is caused to the reception of FM broadcasting stations operating in the band 88-108 MHz. In the event that such interference does occur, the licensee or other agency authorized to operate the facility shall discontinue operation on 108 MHz and shall not resume operation until the interference has been eliminated or the complaint otherwise satisfied. VOR test facilities operating on 108 MHz will not be protected against interference caused by FM broadcasting stations operating in the band 88-108 MHz nor shall the authorization of a VOR test facility on 108 MHz preclude the Commission from authorizing additional FM broadcasting stations.

US99 In the band 1668.4-1670 MHz, the meteorological aids service (radiosonde) will avoid operations to the maximum extent practicable. Whenever it is necessary to operate radiosondes in the band 1668.4-1670 MHz within the United States, notification of the operations shall be sent as far in advance as possible to the Electromagnetic Management Unit, Room 1030, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230.

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US116 In the bands 890-902 MHz and 935-941 MHz, no new assignments are to be made to Federal radio stations after July 10, 1970, except on case-by-case basis to experimental stations. Federal assignments existing prior to July 10, 1970, shall be on a secondary basis to stations in the non-Federal land mobile service and shall be subject to adjustment or removal from the bands 890-902 MHz, 928-932 MHz, and 935-941 MHz at the request of the FCC.

US117 In the band 406.1-410 MHz, the following provisions shall apply:

(a) Stations in the fixed and mobile services are limited to a transmitter output power of 125 watts, and new authorizations for stations, other than mobile stations, are subject to prior coordination by the applicant in the following areas:

(1) Within Puerto Rico and the United States Virgin Islands, contact Spectrum Manager, Arecibo Observatory, HC3 Box 53995, Arecibo, PR 00612. Phone: 787-878-2612, Fax: 787-878-1861, E-mail: prcz@naic.edu.

(2) Within 350 km of the Very Large Array (34° 04' 44" N, 107° 37' 06" W), contact Spectrum Manager, National Radio Astronomy Observatory, P.O. Box O, 1003 Lopezville Road, Socorro, NM 87801. Phone: 505-835-7000, Fax: 505-835-7027, E-mail: nrao-rfi@nrao.edu.

(3) Within 10 km of the Table Mountain Observatory (40° 07' 50" N, 105° 14' 40" W) and for operations only within the sub-band 407-409 MHz, contact Radio Frequency Coordinator, Department of Commerce, 325 Broadway, Boulder, CO 80303. Phone: 303-497-6548, Fax: 303-497-3384.

(b) Non-Federal use is limited to the radio astronomy service and as provided by US13.

US201 In the band 460-470 MHz, space stations in the Earth exploration-satellite service may be authorized for space-to-Earth transmissions on a secondary basis with respect to the fixed and mobile services. When operating in the meteorological-satellite service, such stations shall be protected from harmful interference from other applications of the Earth exploration-satellite service. The power flux-density produced at the Earth's surface by any space station in this band shall not exceed -152 dBW/m^2/4 kHz.

* * * * *

US216 The frequencies 150.775 MHz, 150.790 MHz, 152.0075 MHz, and 163.250 MHz, and the bands 462.94688-463.19688 MHz and 467.94688-468.19688 shall be authorized for the purpose of delivering or rendering medical services to individuals (medical radiocommunication systems), and shall be authorized on a primary basis for Federal and non-Federal use. The frequency 152.0075 MHz may also be used for the purpose of conducting public safety radio communications that include, but are not limited to, the delivering or rendering of medical services to individuals.

(a) The use of the frequencies 150.775 MHz and 150.790 MHz is limited to mobile stations operating with a maximum e.r.p. of 100 watts. Airborne operations are prohibited.

(b) The use of the frequencies 152.0075 MHz and 163.250 MHz is limited to base stations that are authorized only for one-way paging communications to mobile receivers. Transmissions for the purpose of activating or controlling remote objects on these frequencies shall not be authorized.

(c) Non-Federal licensees in the Public Safety Radio Pool holding a valid authorization on May 27, 2005, to operate on the frequencies 150.7825 MHz and 150.7975 MHz may, upon proper renewal application, continue to be authorized for such operation; provided that harmful interference is not caused to present or future Federal stations in the band 150.05-150.8 MHz and, should harmful interference result, that the interfering non-Federal operation shall immediately terminate.

US217 In the band 420-450 MHz, pulse-ranging radiolocation systems may be authorized for use along the shoreline of the conterminous United States and Alaska. In the sub-band 420-435 MHz, spread spectrum radiolocation systems may be authorized within the conterminous United States and Alaska. All stations operating in accordance with this provision shall be secondary to stations operating in accordance with the Table of Frequency Allocations. Authorizations shall be granted on a case-by-case basis; however, operations proposed to be located within the following geographic areas should not expect to be accommodated:

(a) Arizona, Florida, and New Mexico.

(b) Those portions of California and Nevada that are south of latitude 37° 10' N.

(c) That portion of Texas that is west of longitude 104° W.

(d) Within 322 km (200 miles) of Eglin AFB, FL (30° 30' N, 86° 30' W); Patrick AFB, FL (28° 21' N, 80° 43' W); and the Pacific Missile Test Center, Point Mugu, CA (34° 09' N, 119° 11' W).

(e) Within 240 km (150 miles) of Beale AFB, CA (39° 08' N, 121° 26' W).

(f) Within 200 km (124 miles) of Goodfellow AFB, TX (31° 25' N, 100° 24' W) and Warner Robins AFB, GA (32° 38' N, 83° 35' W).

(g) Within 160 km (100 miles) of Clear, AK (64° 17' N, 149° 10' W); Concrete, ND (48° 43' N, 97° 54' W); and Otis AFB, MA (41° 45' N, 70° 32' W).

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US222 In the band 2025-2035 MHz, geostationary operational environmental satellite (GOES) earth stations in the space research and Earth exploration-satellite services may be authorized on a coequal basis for Earth-to-space transmissions for tracking, telemetry, and telecommand at Honolulu, HI (21° 21' 12" N, 157° 52' 36" W); Seattle, WA (47° 34' 15" N, 122° 33' 10" W); and Wallops Island, VA (37° 56' 44" N, 75° 27' 42" W).

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US229 Federal use of the fixed and land mobile services in the band 216-220 MHz and of the aeronautical mobile service in the sub-band 217-220 MHz shall be limited to telemetering and associated telecommand operations. NTIA shall not authorize new Federal assignments in the sub-band 216-217 MHz. The sub-band 216.88-217.08 MHz is allocated to the radiodetermination service on a primary basis for Federal use, limited to the Navy's Space Surveillance (SPASUR) radar system at the following nine sites.

(a) Three stations transmit at a very high power and other operations may be affected within the following areas:

Transmitter sites	Coordinates	Frequency	Interference radius
Gila River (Phoenix), AZ……..	33° 06' 32" N, 112° 01' 45" W	216.97 MHz	150 km (93.2 miles)
Lake Kickapoo (Archer City), TX…….....	33° 32' 47" N, 98° 45' 46" W	216.983 MHz	250 km (155.3 miles)
Jordan Lake (Wetumpka), AL…	32° 39' 33" N, 86° 15' 52" W	216.99 MHz	150 km

(b) Reception of the sub-band 216.965-216.995 MHz shall be protected from harmful interference within 50 kilometers (31.1 miles) of the following sites:

Receive sites	Coordinates
Elephant Butte, NM……..	33° 26' 35" N, 106° 59' 50" W
Fort Stewart, GA……...	31° 58' 36" N, 081° 30' 34" W
Hawkinsville, GA…….....	32° 17' 20" N, 083° 32' 10" W
Red River, AR……..	33° 19' 48" N, 093° 33' 01" W
San Diego, CA…..……	32° 34' 42" N, 116° 58' 11" W
Silver Lake, MS……	33° 08' 42" N, 091° 01' 16" W

US230 The bands 422.1875-425.4875 MHz and 427.1875-429.9875 MHz are allocated to the land mobile service on a primary basis for non-Federal use within 80.5 kilometers (50 miles) of Cleveland, OH (41° 29' 51.2" N, 81° 41' 49.5" W) and Detroit, MI (42° 19' 48.1" N, 83° 02' 56.7" W). The bands 423.8125-425.4875 MHz and 428.8125-429.9875 MHz are allocated to the land mobile service on a primary basis for non-Federal use within 80.5 kilometers of Buffalo, NY (42° 52' 52.2" N, 78° 52' 20.1" W).

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US247 The band 10100-10150 kHz is allocated to the fixed service on a primary basis outside the United States and its insular areas. Transmissions from stations in the amateur service shall not cause harmful interference to this fixed service use and stations in the amateur service shall make all necessary adjustments (including termination of transmission) if harmful interference is caused.

US251 The band 12.75-13.25 GHz is also allocated to the space research (deep space) (space-to-Earth) service for reception only at Goldstone, CA (35° 20' N, 116° 53' W).

US252 The band 2110-2120 MHz is also allocated to the space research service (deep space) (Earth-to-space) on a primary basis at Goldstone, CA (35° 20' N, 116° 53' W).

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US259 In the band 17.3-17.7 GHz, Federal stations in the radiolocation service shall operate with an e.i.r.p. of less than 51 dBW.

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US262 The band 7145-7190 MHz is also allocated to the space research service (deep space) (Earth-to-space) on a secondary basis for non-Federal use. Federal and non-Federal use of the bands 7145-7190 MHz and 34.2-34.7 GHz by the space research service (deep space) (Earth-to-space) and of the band 31.8-32.3 GHz by the space research service (deep space) (space-to-Earth) is limited to Goldstone, CA (35° 20' N, 116° 53' W).

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US265 In the band 10.6-10.68 GHz, the fixed service shall be limited to an e.i.r.p. of 40 dBW and the power delivered to the antenna shall not exceed -3 dBW per 250 kHz.

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US267 In the band 902-928 MHz, amateur stations shall transmit only in the sub-bands 902-902.4, 902.6-904.3, 904.7-925.3, 925.7-927.3, and 927.7-928 MHz within the States of Colorado and Wyoming, bounded by the area of latitudes 39° N and 42° N and longitudes 103° W and 108° W.

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US273 In the bands 74.6-74.8 MHz and 75.2-75.4 MHz, stations in the fixed and mobile services are limited to a maximum power of 1 watt from the transmitter into the antenna transmission line.

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US285 Under exceptional circumstances, the carrier frequencies 2635 kHz, 2638 kHz, and 2738 kHz may be authorized to coast stations.

US290 In the band 1900-2000 kHz, amateur stations may continue to operate on a secondary basis to the radiolocation service, pending a decision as to their disposition through a future rule making proceeding in conjunction with the implementation of the standard broadcasting service in the band 1625-1705 kHz.

US294 In the spectrum below 490 kHz, electric utilities operate Power Line Carrier (PLC) systems on power transmission lines for communications important to the reliability and security of electric service to the public. These PLC systems operate under the provisions of 47 CFR part 15 or Chapter 7 of the *NTIA Manual*, on an unprotected and noninterference basis with respect to authorized radio users. Notification of intent to place new or revised radio frequency assignments or PLC frequency uses in the bands below 490 kHz is to be made in accordance with the Rules and Regulations of the FCC and NTIA, and users are urged to minimize potential interference to the degree practicable. This footnote does not provide any allocation status to PLC radio frequency uses.

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US299 In Alaska, the band 1615-1705 kHz is also allocated to the maritime mobile and Alaska fixed services on a secondary basis to Region 2 broadcast operations.

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US301 Except as provided in NG30, broadcast auxiliary stations licensed as of November 21, 1984, to operate in the band 942-944 MHz may continue to operate on a co-equal primary basis to other stations and services operating in the band in accordance with the Table of Frequency Allocations.

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US307 The band 5150-5216 MHz is also allocated to the fixed-satellite service (space-to-Earth) for feeder links in conjunction with the radiodetermination-satellite service operating in the bands 1610-1626.5 MHz and 2483.5-2500 MHz. The total power flux-density at the Earth's surface shall in no case exceed -159 dBW/m² per 4 kHz for all angles of arrival.

US308 In the bands 1549.5-1558.5 MHz and 1651-1660 MHz, those requirements of the aeronautical mobile-satellite (R) service that cannot be accommodated in the bands 1545-1549.5 MHz, 1558.5-1559 MHz, 1646.5-1651 MHz, and 1660-1660.5 MHz shall have priority access with real-time preemptive capability for communications in the mobile-satellite service. Systems not interoperable with the aeronautical mobile-satellite (R) service shall operate on a secondary basis. Account shall be taken of the priority of safety-related communications in the mobile-satellite service.

US309 In the bands 1545-1559 MHz, transmissions from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links. In the band 1646.5-1660.5 MHz, transmissions from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.

US310 In the band 14.896-15.121 GHz, non-Federal space stations in the space research service may be authorized on a secondary basis to transmit to Tracking and Data Relay Satellites subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to authorized Federal stations. The power flux-density (pfd) produced by such non-Federal stations at the Earth's surface in any 1 MHz band for all conditions and methods of modulation shall not exceed:

-124 dB(W/m²) for $0° < \theta \leq 5°$
$-124 + (\theta - 5)/2$ dB(W/m²) for $5° < \theta \leq 25°$
-114 dB(W/m²) for $25° < \theta \leq 90°$

where θ is the angle of arrival of the radio-frequency wave (degrees above the horizontal). These limits relate to the pfd and angles of arrival which would be obtained under free-space propagation conditions.

US311 Radio astronomy observations may be made in the bands 1350-1400 MHz, 1718.8-1722.2 MHz, and 4950-4990 MHz on an unprotected basis at the following radio astronomy observatories:

Allen Telescope Array, Hat Creek, CA	Rectangle between latitudes 40° 00' N and 42° 00' N and between longitudes 120° 15' W and 122° 15' W.	
NASA Goldstone Deep Space Communications Complex, Goldstone, CA	80 kilometers (50 mile) radius centered on 35° 20' N, 116° 53' W.	
National Astronomy and Ionosphere Center, Arecibo, PR	Rectangle between latitudes 17° 30' N and 19° 00' N and between longitudes 65° 10' W and 68° 00' W.	
National Radio Astronomy Observatory, Socorro, NM	Rectangle between latitudes 32° 30' N and 35° 30' N and between longitudes 106° 00' W and 109° 00' W.	
National Radio Astronomy Observatory, Green Bank, WV	Rectangle between latitudes 37° 30' N and 39° 15' N and between longitudes 78° 30' W and 80° 30' W.	
National Radio Astronomy Observatory, Very Long Baseline Array Stations	80 kilometer radius centered on:	
	North latitude	West longitude
Brewster, WA	48° 08'	119° 41'
Fort Davis, TX	30° 38'	103° 57'
Hancock, NH	42° 56'	71° 59'
Kitt Peak, AZ	31° 57'	111° 37'
Los Alamos, NM	35° 47'	106° 15'
Mauna Kea, HI	19° 48'	155° 27'
North Liberty, IA	41° 46'	91° 34'
Owens Valley, CA	37° 14'	118° 17'
Pie Town, NM	34° 18'	108° 07'
Saint Croix, VI	17° 45'	64° 35'
Owens Valley Radio Observatory, Big Pine, CA	Two contiguous rectangles, one between latitudes 36° 00' N and 37° 00' N and between longitudes 117° 40' W and 118° 30' W and the second between latitudes 37° 00' N and 38° 00' N and between longitudes 118° 00' W and 118° 50' W.	

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US315 In the bands 1530-1544 MHz and 1626.5-1645.5 MHz, maritime mobile-satellite distress and safety communications, e.g., GMDSS, shall have priority access with real-time preemptive capability in the mobile-satellite service. Communications of mobile-satellite system stations not participating in the GMDSS shall operate on a secondary basis to distress and safety communications of stations operating in the GMDSS. Account shall be taken of the priority of safety-related communications in the mobile-satellite service.

US316 The band 2900-3000 MHz is also allocated to the meteorological aids service on a primary basis for Federal use. Operations in this service are limited to Next Generation Weather Radar (NEXRAD) systems where accommodation in the band 2700-2900 MHz is not technically practical and are subject to coordination with existing authorized stations.

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US323 In the band 148-149.9 MHz, no individual mobile earth station shall transmit on the same frequency being actively used by fixed and mobile stations and shall transmit no more than 1% of the time during any 15 minute period; except, individual mobile earth stations in this band that do not avoid frequencies actively being used by the fixed and mobile services shall not exceed a power density of −16 dBW/4 kHz and shall transmit no more than 0.25% of the time during any 15 minute period. Any single transmission from any individual mobile earth station operating in this band shall not exceed 450 ms in duration and consecutive transmissions from a single mobile earth station on the same frequency shall be separated by at least 15 seconds. Land earth stations in this band shall be subject to electromagnetic compatibility analysis and coordination with terrestrial fixed and mobile stations.

US324 In the band 400.15-401 MHz, Federal and non-Federal satellite systems shall be subject to electromagnetic compatibility analysis and coordination.

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US334 In the band 17.8-20.2 GHz, Federal space stations in both geostationary (GSO) and non-geostationary satellite orbits (NGSO) and associated earth stations in the fixed-satellite service (space-to-Earth) may be authorized on a primary basis. For a Federal geostationary satellite network to operate on a primary basis, the space station shall be located outside the arc, measured from east to west, 70° West longitude to 120° West longitude. Coordination between Federal fixed-satellite systems and non-Federal space and terrestrial systems operating in accordance with the United States Table of Frequency Allocations is required.

(a) In the sub-band 17.8-19.7 GHz, the power flux-density (pfd) at the surface of the Earth produced by emissions from a Federal GSO space station or from a Federal space station in a NGSO constellation of 50 or fewer satellites, for all conditions and for all methods of modulation, shall not exceed the following values in any 1 MHz band:

(1) -115 dB(W/m²) for angles of arrival above the horizontal plane (δ) between 0° and 5°,

(2) -115 + 0.5(δ - 5) dB(W/m²) for δ between 5° and 25°, and

(3) -105 dB(W/m²) for δ between 25° and 90°.

(b) In the sub-band 17.8-19.3 GHz, the pfd at the surface of the Earth produced by emissions from a Federal space station in an NGSO constellation of 51 or more satellites, for all conditions and for all methods of modulation, shall not exceed the following values in any 1 MHz band:

(1) -115 - X dB(W/m²) for δ between 0° and 5°,

(2) -115 - X + ((10 + X)/20)(δ - 5) dB(W/m²) for δ between 5° and 25°, and

(3) -105 dB(W/m²) for δ between 25° and 90°; where X is defined as a function of the number of satellites, n, in an NGSO constellation as follows:

For $n \leq 288$, $X = (5/119)(n - 50)$ dB; and

For $n > 288$, $X = (1/69)(n + 402)$ dB.

US335 In the band 220-222 MHz, Federal and non-Federal use of the fixed and land mobile services is restricted as follows:

(a) The sub-bands 220-220.55/221.0-221.55, 220.6-220.8/221.6-221.8, 220.85-220.9/221.85-221.9 and 220.925-221/221.925-222 MHz (Channels 1-110, 121-160, 171-180 and 186-200, respectively) are available for exclusive non-Federal use. These sub-bands are also available for temporary fixed geophysical telemetry operations on a secondary basis to the fixed and land mobile services.

(b) The sub-bands 220.55-220.6/221.55-221.6 MHz (Channels 111-120) are available for exclusive Federal use.

(c) The sub-bands 220.8-220.85/221.8-221.85 and 220.9-220.925/221.9-221.925 MHz (Channels 161-170 and 181-185, respectively) are available for shared Federal and non-Federal use.

US337 In the band 13.75-13.8 GHz, the FCC shall coordinate earth stations in the fixed-satellite service with NTIA on a case-by-case basis in order to minimize harmful interference to the Tracking and Data Relay Satellite System's forward space-to-space link (TDRSS forward link-to-LEO).

US338 In the band 2305-2310 MHz, space-to-Earth operations are prohibited. Additionally, in the band 2305-2320 MHz, the FCC shall coordinate all Wireless Communications Service (WCS) operations within 50 km of NASA's Deep Space facility in Goldstone, CA (35° 20" N, 116° 53" W) with NTIA in order to minimize harmful interference to deep space reception in the band 2290-2300 MHz.

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US342 In making assignments to stations of other services to which the bands:

13360-13410 kHz	22.01-22.21 GHz*	111.8-114.25 GHz
25550-25670 kHz	22.21-22.5 GHz	128.33-128.59 GHz*
37.5-38.25 MHz	22.81-22.86 GHz*	129.23-129.49 GHz*
322-328.6 MHz*	23.07-23.12 GHz*	130-134 GHz
1330-1400 MHz*	31.2-31.3 GHz	136-148.5 GHz
1610.6-1613.8 MHz*	36.43-36.5 GHz*	151.5-158.5 GHz
1660-1660.5 MHz*	42.5-43.5 GHz	168.59-168.93 GHz*
1668.4-1670 MHz*	42.77-42.87 GHz*	171.11-171.45 GHz*
3260-3267 MHz*	43.07-43.17 GHz*	172.31-172.65 GHz*
3332-3339 MHz*	43.37-43.47 GHz*	173.52-173.85 GHz*
3345.8-3352.5 MHz*	48.94-49.04 GHz*	195.75-196.15 GHz*
4825-4835 MHz*	76-86 GHz	209-226 GHz
4950-4990 MHz	92-94 GHz	241-250 GHz
6650-6675.2 MHz*	94.1-100 GHz	252-275 GHz
14.47-14.5 GHz*	102-109.5 GHz	

are allocated (*indicates radio astronomy use for spectral line observations), all practicable steps shall be taken to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (*see* ITU Radio Regulations at Nos. 4.5 and 4.6 and Article 29).

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US344 In the band 5091-5250 MHz, the FCC shall coordinate earth stations in the fixed-satellite service (Earth-to-space) with NTIA (see Recommendation ITU-R S.1342). In order to better protect the operation of the international standard system (microwave landing system) in the band 5000-5091 MHz, non-Federal tracking and telecommand operations should be conducted in the band 5150-5250 MHz.

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US346 Except as provided for below and by US222, Federal use of the band 2025-2110 MHz by the space operation service (Earth-to-space), Earth exploration-satellite service (Earth-to-space), and space research service (Earth-to-space) shall not constrain the deployment of the Television Broadcast Auxiliary Service, the Cable Television Relay Service, or the Local Television Transmission Service. To facilitate compatible operations between non-Federal terrestrial receiving stations at fixed sites and Federal earth station transmitters, coordination is required. To facilitate compatible operations between non-Federal terrestrial transmitting stations and Federal spacecraft receivers, the terrestrial transmitters in the band 2025-2110 MHz shall not be high-density systems (see Recommendations ITU-R SA.1154 and ITU-R F.1247). Military satellite control stations at the following sites shall operate on a co-equal, primary basis with non-Federal operations:

Facility	Coordinates	
Naval Satellite Control Network, Prospect Harbor, ME	44° 24' 16" N	068° 00' 46" W
New Hampshire Tracking Station, New Boston AFS, NH	42° 56' 52" N	071° 37' 36" W
Eastern Vehicle Check-out Facility & GPS Ground Antenna & Monitoring Station, Cape Canaveral, FL	28° 29' 09" N	080° 34' 33" W
Buckley AFB, CO	39° 42' 55" N	104° 46' 36" W
Colorado Tracking Station, Schriever AFB, CO	38° 48' 21" N	104° 31' 43" W
Kirtland AFB, NM	34° 59' 46" N	106° 30' 28" W
Camp Parks Communications Annex, Pleasanton, CA	37° 43' 51" N	121° 52' 50" W
Naval Satellite Control Network, Laguna Peak, CA	34° 06' 31" N	119° 03' 53" W
Vandenberg Tracking Station, Vandenberg AFB, CA	34° 49' 21" N	120° 30' 07" W
Hawaii Tracking Station, Kaena Pt, Oahu, HI	21° 33' 44" N	158° 14' 31" W
Guam Tracking Stations, Anderson AFB, and Naval CTS, Guam	13° 36' 54" N	144° 51' 18" E

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US348 The band 3650-3700 MHz is also allocated to the Federal radiolocation service on a primary basis at the following sites: St. Inigoes, MD (38° 10' N, 76° 23' W); Pascagoula, MS (30° 22' N, 88° 29' W); and Pensacola, FL (30° 21' 28" N, 87° 16' 26" W). The FCC shall coordinate all non-Federal operations within 80 km of these sites with NTIA on a case-by-case basis.

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US351 In the band 1390-1400 MHz, Federal operations (except for medical telemetry and telecommand operations in the sub-band 1395-1400 MHz) are on a non-interference basis to non-Federal operations and shall not constrain implementation of non-Federal operations. However, Federal operations authorized as of March 22, 1995 at 17 sites identified below will be continued on a fully protected basis until January 1, 2009.

80 km radius of operation centered on:		
State	Site	Coordinates
AK	Ft. Greely	63° 47' N, 145° 52' W
AL	Ft. Rucker	31° 13' N, 085° 49' W
AL	Redstone	34° 35' N, 086° 35' W
AZ	Ft. Huachuca	31° 33' N, 110° 18' W
AZ	Yuma	32° 29' N, 114° 20' W
CA	China Lake	35° 41' N, 117° 41' W
CA	Edwards AFB	34° 54' N, 117° 53' W
CA	Pacific Missile Range	34° 07' N, 119° 30' W
FL	Eglin AFB	30° 28' N, 086° 31' W
MD	Aberdeen PG	39° 29' N, 076° 08' W
MD	Patuxent River	38° 17' N, 076° 25' W
NC	Cherry Point	34° 57' N, 076° 56' W
NM	Holloman AFB	33° 29' N, 106° 50' W
NM	WSM Range	32° 10' N, 106° 21' W
OH	Wright-Patterson AFB	39° 50' N, 084° 03' W
UT	Dugway PG	40° 11' N, 112° 53' W
UT	Utah Test Range	40° 57' N, 113° 05' W

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US353 In the bands 56.24-56.29 GHz, 58.422-58.472 GHz, 59.139-59.189 GHz, 59.566-59.616 GHz, 60.281-60.331 GHz, 60.41-60.46 GHz, and 62.461-62.511 GHz, space-based radio astronomy observations may be made on an unprotected basis.

US354 In the band 58.422-58.472 GHz, airborne stations and space stations in the space-to-Earth direction shall not be authorized.

US355 In the band 10.7-11.7 GHz, non-geostationary satellite orbit licensees in the fixed-satellite service (space-to-Earth), prior to commencing operations, shall coordinate with the following radio astronomy observatories to achieve a mutually acceptable agreement regarding the protection of the radio telescope facilities operating in the band 10.6-10.7 GHz:

Observatory	North latitude	West longitude	Elevation (in meters)
Arecibo Observatory, PR…….....	18° 20' 39"	66° 45' 10"	496
Green Bank Telescope (GBT), WV…..…….....	38° 25' 59"	79° 50' 23"	825
Very Large Array (VLA), Socorro, NM…...…	34° 04' 44"	107° 37' 06"	2126
Very Long Baseline Array (VLBA) Stations:			
Brewster, WA…….……	48° 07' 52"	119° 41' 00"	255
Fort Davis, TX……..	30° 38' 06"	103° 56' 41"	1615
Hancock, NH…….....	42° 56' 01"	71° 59' 12"	309
Kitt Peak, AZ…….....	31° 57' 23"	111° 36' 45"	1916
Los Alamos, NM…….....	35° 46' 30"	106° 14' 44"	1967
Mauna Kea, HI…….…….....	19° 48' 05"	155° 27' 20"	3720
North Liberty, IA……...	41° 46' 17"	91° 34' 27"	241
Owens Valley, CA…….....	37° 13' 54"	118° 16' 37"	1207
Pie Town, NM…….....	34° 18' 04"	108° 07' 09"	2371
St. Croix, VI……..	17° 45' 24"	64° 35' 01"	16

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US359 In the band 15.43-15.63 GHz, use of the fixed-satellite service (Earth-to-space) is limited to non-Federal feeder links of non-geostationary systems in the mobile-satellite service. The FCC shall coordinate earth stations in this band with NTIA (see Annex 3 of Recommendation ITU-R S.1340).

US360 The band 33-36 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for Federal use. Coordination between Federal fixed-satellite service systems and non-Federal systems operating in accordance with the United States Table of Frequency Allocations is required.

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US362 The band 1670-1675 MHz is allocated to the meteorological-satellite service (space-to-Earth) on a primary basis for Federal use. Earth station use of this allocation is limited to Wallops Island, VA (37° 56' 44" N, 75° 27' 37" W), Fairbanks, AK (64° 58' 22" N, 147° 30' 04" W), and Greenbelt, MD (39° 00' 02" N, 76° 50' 29" W). Applicants for non-Federal stations within 100 kilometers of the Wallops Island or Fairbanks coordinates and within 65 kilometers of the Greenbelt coordinates shall notify NOAA in accordance with the procedures specified in 47 CFR 1.924.

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US366 In the bands 5900-5950 kHz, 7300-7350 kHz, 9400-9500 kHz, 11600-11650 kHz, 12050-12100 kHz, 13570-13600 kHz, 13800-13870 kHz, 15600-15800 kHz, 17480-17550 kHz, and 18900-19020 kHz, the following provisions shall apply to stations in the fixed and mobile except aeronautical mobile services:

(a) All Stations. Federal and non-Federal stations shall: (1) be limited to communicating only within the United States and its insular areas; (2) not cause harmful interference to the reception of, and must accept interference from, international broadcast stations; (3) be limited to the minimum power required to achieve reliable communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

(b) Existing and Future Federal Stations. (1) Frequencies in all of the above listed frequency bands may be used by existing and future Federal stations in the fixed service; and (2) Frequencies in the bands

5900-5950 kHz, 7300-7350 kHz, 13570-13600 kHz, and 13800-13870 kHz may also be used by existing and future Federal stations in the mobile except aeronautical mobile service.

(c) Grandfathered non-Federal Stations. (1) Frequencies in the bands 5900-5950 kHz, 7300-7350 kHz, 9400-9500 kHz, 11600-11650 kHz, 12050-12100 kHz, 13800-13870 kHz, and 15600-15800 kHz may continue to be used by non-Federal stations in the fixed service that were licensed prior to March 25, 2007; and (2) Frequencies in the bands 5900-5950 kHz and 7300-7350 kHz may continue to be used by non-Federal stations in the mobile except aeronautical mobile service that were licensed prior to March 25, 2007.

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US368 The use of the bands 1390-1392 MHz and 1430-1432 MHz by the fixed-satellite service is limited to feeder links for the Non-Voice Non-Geostationary Mobile-Satellite Service and is contingent on: (a) the completion of ITU-R studies on all identified compatibility issues as shown in Annex 1 of Resolution 745 (WRC-2003); (b) measurement of emissions from equipment that would be employed in operational systems and demonstrations to validate the studies as called for in Resolution 745 (WRC-2003); and (c) compliance with any technical and operational requirements that may be imposed at WRC-07 to protect other services in these bands and passive services in the band 1400-1427 MHz from unwanted emissions. The FCC shall coordinate individual assignments with NTIA (see, for example, Recommendations ITU-R RA.769-2 and ITU-R SA.1029-2) to ensure the protection of passive services in the band 1400-1427 MHz. As part of the coordination requirements, the feeder uplink and downlink systems shall be tested and certified to be in conformance with the technical and operational out-of-band requirements for the protection of passive services in the band 1400-1427 MHz. Certification and all supporting documentation shall be submitted to the FCC at least three months prior to launch.

US378 In the band 1710-1755 MHz, the following provisions apply:

(a) Federal fixed and tactical radio relay stations may operate indefinitely on a primary basis within 80 km of Cherry Point, NC (34° 58' N, 076° 56' W) and Yuma, AZ (32° 32' N, 113° 58' W).

(b) Federal fixed and tactical radio relay stations shall operate on a secondary basis to primary non-Federal operations at the 14 sites listed below:

80 km radius of operation centered on:		
State	Location	Coordinates
CA	China Lake	35° 41' N 117° 41' W
CA	Pacific Missile Test Range/Point Mugu	34° 07' N 119° 30' W
FL	Eglin AFB	30° 29' N 086° 31' W
MD	Patuxent River	38° 17' N 076° 25' W
NM	White Sands Missile Range	33° 00' N 106° 30' W
NV	Nellis AFB	36° 14' N 115° 02' W
UT	Hill AFB	41° 07' N 111° 58' W
50 km radius of operation centered on:		
AL	Fort Rucker	31° 13' N 085° 49' W
CA	Fort Irwin,	35° 16' N 116° 41' W
GA	Fort Benning	32° 22' N 084° 56' W
GA	Fort Stewart	31° 52' N 081° 37' W
KY	Fort Campbell	36° 41' N 087° 28' W
NC	Fort Bragg	35° 09' N 079° 01' W
WA	Fort Lewis	47° 05' N 122° 36' W

(c) In the sub-band 1710-1720 MHz, precision guided munitions shall operate on a primary basis until inventory is exhausted or until December 31, 2008, whichever is earlier.

(d) All other Federal stations in the fixed and mobile services shall operate on a primary basis until reaccommodated in accordance with the Commercial Spectrum Enhancement Act.

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US381 The frequencies 5332 kHz, 5348 kHz, 5368 kHz, 5373 kHz, and 5405 kHz are allocated to the amateur service on a secondary basis. Amateur use of these frequencies shall be limited to 50 watts e.r.p. and to single sideband suppressed carrier modulation (emission designator 2K8J3E), upper sideband voice transmissions only.

* * * * *

US388 In the bands 81-86 GHz, 92-94 GHz, and 94.1-95 GHz and within the coordination distances indicated below, assignments to allocated services shall be coordinated with the following radio astronomy observatories. New observatories shall not receive protection from fixed stations that are licensed to operate in the one hundred most populous urbanized areas as defined by the U.S. Census Bureau for the year 2000.

NOTE: Satisfactory completion of the coordination procedure utilizing the automated mechanism, see 47 CFR 101.1523, will be deemed to establish sufficient separation from radio astronomy observatories, regardless of whether the distances set forth above are met.

Telescope and site	150 kilometer (93 mile) radius centered on:	
	North latitude	West longitude
National Radio Astronomy Observatory (NRAO), Robert C. Byrd Telescope, Green Bank, WV…….	…….38° 25' 59"	……...79° 50' 23"
NRAO, Very Large Array, Socorro, NM……	…….34° 04' 44"	…….107° 37' 06"
University of Arizona 12-m Telescope, Kitt Peak, AZ	…….31° 57' 12"	…….111° 36' 53"
Caltech Telescope, Owens Valley, CA……..	…….37° 13' 54"	…….118° 17' 36"
Five College Observatory, Amherst, MA……..	……42° 23' 30"	……...72° 20' 42"
Haystack Observatory, Westford, MA……..	……42° 37' 24"	……...71° 29' 18"
James Clerk Maxwell Telescope, Mauna Kea, HI…..	……19° 49' 33"	…….155° 28' 47"
Combined Array for Research in Millimeter-wave Astronomy (CARMA), CA	37° 16' 43"	118° 08' 32"
NRAO, Very Long Baseline Array Stations	25 kilometer (15.5 mile) radius centered on:	
	North latitude	West longitude
Brewster, WA……...	…….48° 07' 52"	……119° 41' 00"
Fort Davis, TX……..…	…….30° 38' 06"	……103° 56' 41"
Hancock, NH……	…….42° 56' 01"	……..71° 59' 12"
Kitt Peak, AZ……...	…….31° 57' 23"	…….111° 36' 45"
Los Alamos, NM……..	…….35° 46' 30"	…….106° 14' 44"
Mauna Kea, HI…….	…….19° 48' 05"	…….155° 27' 20"
North Liberty, IA……..	……41° 46' 17"	……...91° 34' 27"
Owens Valley, CA……	…….37° 13' 54"	…….118° 16' 37"
Pie Town, NM……..	…….34° 18' 04"	…….108° 07' 09"
Saint Croix, VI	17° 45' 24"	64° 35' 01"

* * * * *

US396 The band 7350-7400 kHz is allocated exclusively to the broadcasting service in accordance with the schedule specified below, except that, in Alaska, the sub-band 7368.5-7371.3 kHz is allocated to the fixed service on an exclusive basis for non-Federal use in accordance with 47 CFR 80.387.

(a) Until March 29, 2009, the band 7350-7400 kHz is allocated to the fixed service on a primary basis and to the mobile except aeronautical mobile service on a secondary basis for Federal and non-Federal use.

(b) After March 29, 2009, authority to operate in the band 7350-7400 kHz shall not be extended to new non-Federal stations in the fixed and mobile except aeronautical mobile services.

(c) After March 29, 2009, Federal and non-Federal stations in the fixed and mobile except aeronautical mobile services shall: (1) be limited to communications wholly within the United States and its insular areas; (2) not cause harmful interference to the broadcasting service; (3) be limited to the

minimum power needed to achieve communications; and (4) take account of the seasonal use of frequencies by the broadcasting service published in accordance with Article 12 of the ITU Radio Regulations.

US397 In the band 432-438 MHz, the Earth exploration-satellite service (active) is allocated on a secondary basis for Federal use. Stations in the Earth exploration-satellite service (active) shall not be operated within line-of-sight of the United States except for the purpose of short duration pre-operational testing. Operations under this allocation shall not cause harmful interference to, nor claim protection from, any other services allocated in the band 432-438 MHz in the United States, including secondary services and the amateur-satellite service.

* * * * *

US399 Except as indicated below, the bands 161.9625-161.9875 MHz (AIS 1 with its center frequency at 161.975 MHz) and 162.0125-162.0375 MHz (AIS 2 with its center frequency at 162.025 MHz) are allocated to the maritime mobile service on a primary basis for Federal and non-Federal use, and shall be used exclusively for Automatic Identification Systems. However, in VHF Public Coast Station Areas (VPCSAs) 1-9, site-based VHF Public Coast stations licensed prior to November 13, 2006 may continue to operate on a co-primary basis in the band 161.9625-161.9875 MHz until expiration of the license term for licenses in active status as of November 13, 2006, and in VPCSAs 10-42, the band 161.9625-161.9875 MHz is allocated to the maritime mobile service on a primary basis for exclusive non-Federal use. See 47 CFR 80.371(c)(1)(ii) for the definitions of VPCSAs.

* * * * *

US401 In the band 17.7-17.8 GHz, Federal earth stations in the fixed-satellite service (space-to-Earth) may be authorized in the Denver, CO and Washington, DC areas on a primary basis. Before commencement of operations, the FCC shall coordinate fixed service applications supporting Multichannel Video Programming Distributors (MVPD) with NTIA.

* * * * *

NON-FEDERAL GOVERNMENT (NG) FOOTNOTES

* * * * *

NG1 The band 535-1705 kHz is also allocated to the mobile service on a secondary basis for the distribution of public service information from Travelers Information Stations operating in accordance with the provisions of 47 CFR 90.242 on 10 kilohertz spaced channels from 540 kHz to 1700 kHz.

* * * * *

NG28 In Puerto Rico and the United States Virgin Islands, the band 160.86-161.4 MHz is available for assignment to remote pickup broadcast stations on a shared basis with stations in the Industrial/Business Pool.

NG30 In Puerto Rico, the band 942-944 MHz is alternatively allocated to the fixed service (aural broadcast auxiliary stations).

* * * * *

NG51 In Puerto Rico and the United States Virgin Islands, the use of band 150.8-151.49 MHz by the fixed and land mobile services is limited to stations in the Industrial/Business Pool.

NG53 In the band 13.15-13.25 GHz, the following provisions shall apply:

(a) The sub-band 13.15-13.2 GHz is reserved for television pickup (TVPU) and cable television relay service (CARS) pickup stations inside a 50 km radius of the 100 television markets delineated in 47 CFR 76.51; and outside these areas, TVPU stations, CARS stations and non-geostationary satellite orbit fixed-satellite service (NGSO FSS) gateway earth stations shall operate on a co-primary basis.

(b) The sub-band 13.2-13.2125 GHz is reserved for TVPU stations on a primary basis and for CARS pickup stations on a secondary basis inside a 50 km radius of the 100 television markets delineated in 47 CFR 76.51; and outside these areas, TVPU stations and NGSO FSS gateway earth stations shall operate on a co-primary basis and CARS stations shall operate on a secondary basis.

(c) In the band 13.15-13.25 GHz, fixed television auxiliary stations licensed pursuant to applications accepted for filing before September 1, 1979, may continue operation, subject to periodic license renewals.

(d) In the sub-band 13.15-13.2125 GHz, NGSO FSS gateway uplink transmissions shall be limited to a maximum e.i.r.p. of 3.2 dBW towards 0° on the radio horizon.

NOTE: The above provisions shall not apply to geostationary satellite orbit (GSO) FSS operations in the band 12.75-13.25 GHz.

NG56 In the bands 72-73 and 75.4-76 MHz, the use of mobile radio remote control of models is on a secondary basis to all other fixed and mobile operations. Such operations are subject to the condition that interference will not be caused to common carrier domestic public stations, to remote control of industrial equipment operating in the band 72-76 MHz, or to the reception of television signals on channels 4 (66-72 MHz) or 5 (76-82 MHz). Television interference shall be considered to occur whenever reception of regularly used television signals is impaired or destroyed, regardless of the strength of the television signal or the distance to the television station.

* * * * *

NG66 The band 470-512 MHz (TV channels 14-20) is allocated to the broadcasting service on an exclusive basis throughout the United States and its insular areas, except as described below:

(a) In the urbanized areas listed in the table below, the indicated frequency bands are allocated to the land mobile service on an exclusive basis for assignment to eligibles in the Public Mobile Services, the Public Safety Radio Pool, and the Industrial/Business Radio Pool, except that:

(1) Licensees in the land mobile service that are regulated as Commercial Mobile Radio Service (CMRS) providers may also use their assigned spectrum to provide fixed service on a primary basis.

(2) The use of the band 482-488 MHz (TV channel 16) is limited to eligibles in the Public Safety Radio Pool in or near (i) the Los Angeles urbanized area; and (ii) New York City; Nassau, Suffolk, and Westchester Counties in New York State; and Bergen County, NJ.

Urbanized area	Bands (MHz)	TV channels
Boston, MA	470-476, 482-488	14, 16
Chicago, IL-Northwestern IN	470-476, 476-482	14, 15
Cleveland, OH	470-476, 476-482	14, 15
Dallas-Fort Worth, TX	482-488	16
Detroit, MI	476-482, 482-488	15, 16
Houston, TX	488-494	17
Los Angeles, CA	470-476, 482-488, 506-512	14, 16, 20
Miami, FL	470-476	14
New York, NY-Northeastern NJ	470-476, 476-482, 482-488	14, 15, 16
Philadelphia, PA-NJ	500-506, 506-512	19, 20
Pittsburgh, PA	470-476, 494-500	14, 18
San Francisco-Oakland, CA	482-488, 488-494	16, 17
Washington, DC-MD-VA	488-494, 494-500	17, 18

(b) In the Gulf of Mexico offshore from the Louisiana-Texas coast, the band 476-494 MHz (TV channels 15-17) is allocated to the fixed and mobile services on a primary basis for assignment to eligibles in the Public Mobile and Private Land Mobile Radio Services.

(c) In Hawaii, the band 488-494 MHz (TV channel 17) is allocated exclusively to the fixed service for use by common carrier control and repeater stations for point-to-point inter-island communications only.

(d) The use of these allocations is further subject to the conditions set forth in 47 CFR parts 22 and 90.

* * * * *

NG112 The frequencies 25.04, 25.08, 150.980, 154.585, 158.445, 159.480, 454.000 and 459.000 MHz may be authorized to stations in the Industrial/Business Pool for use primarily in oil spill containment and cleanup operations and secondarily in regular land mobile communication.

* * * * *

NG124 In the bands 30.85-34, 37-38, 39-40, 42-47.41, 150.995-156.25, 158.715-159.465, 453.0125-453.9875, 458.0125-458.9875, 460.0125-465.6375, and 467.9375-467.9875 MHz, police licensees are authorized to operate low power transmitters on a secondary basis in accordance with the provisions of 47 CFR 2.803 and 90.20(e)(5).

* * * * *

NG141 In Alaska, the frequencies 42.4 MHz and 44.1 MHz are authorized on a primary basis for meteor burst communications by fixed stations in the Rural Radio Service operating under the provisions of 47 CFR part 22. In Alaska, the frequencies 44.2 MHz and 45.9 MHz are authorized on a primary basis for meteor burst communications by fixed private radio stations operating under the provisions of 47 CFR part 90. The private radio station frequencies may be used by Common Carrier stations on a secondary, noninterference basis and the Common Carrier frequencies may be used by private radio stations for meteor burst communications on a secondary, noninterference basis. Users shall cooperate to the extent practical to minimize potential interference. Stations utilizing meteor burst communications shall not cause harmful interference to stations of other radio services operating in accordance with the Table of Frequency Allocations.

* * * * *

NG143 In the band 11.7-12.2 GHz, protection from harmful interference shall be afforded to transmissions from space stations not in conformance with ITU Radio Regulation No. 5.488 only if the operations of such space stations impose no unacceptable constraints on operations or orbit locations of space stations in conformance with No. 5.488.

NG144 Stations authorized as of September 9, 1983 to use frequencies in the bands 17.7-18.3 GHz and 19.3-19.7 GHz may, upon proper application, continue operations. Fixed stations authorized in the band 18.3-19.3 GHz that remain co-primary under the provisions of 47 CFR 21.901(e), 74.502(c), 74.602(g), 78.18(a)(4), and 101.147(r) may continue operations consistent with the provisions of those sections.

* * * * *

NG147 In the band 2483.5-2500 MHz, non-Federal stations in the fixed and mobile services that are licensed under 47 CFR parts 74, 90, or 101, which were licensed as of July 25, 1985, and those whose initial applications were filed on or before July 25, 1985, may continue to operate on a primary basis with the mobile-satellite and radiodetermination-satellite services, and in the sub-band 2495-2500 MHz, these grandfathered stations may also continue to operate on a primary basis with stations in the fixed and mobile except aeronautical mobile services that are licensed under 47 CFR part 27.

* * * * *

NG149 The bands 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-512 MHz, 512-608 MHz, and 614-698 MHz are also allocated to the fixed service to permit subscription television operations in accordance with 47 CFR part 73.

* * * * *

NG155 The bands 159.500-159.675 MHz and 161.375-161.550 MHz are allocated to the maritime service as described in 47 CFR part 80. Additionally, the frequencies 159.550, 159.575 and 159.600 MHz are available for low-power intership communications.

* * * * *

NG158 The bands 763-775 MHz and 793-805 MHz are available for assignment to the public safety services, as described in 47 CFR part 90.

NG159 Any full-power television licensee that holds a television broadcast license to operate between 698 and 806 megahertz (TV channels 52-69) shall be entitled to protection from harmful interference through February 17, 2009, and may not operate at that frequency after February 17, 2009. Auxiliary broadcast stations (*i.e.*, low power TV stations, translator stations, booster stations, TV auxiliary (backup) facilities, and low power auxiliary stations) may continue to operate indefinitely in the band 698-806 MHz on a secondary basis to all other stations operating in that band.

NG160 In the band 5850-5925 MHz, the use of the non-Federal mobile service is limited to Dedicated Short Range Communications operating in the Intelligent Transportation System radio service.

NG163 The use of the band 17.3-17.7 GHz by the broadcasting-satellite service is limited to geostationary satellites.

* * * * *

NG167 The use of the band 24.75-25.25 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

* * * * *

NG172 In the band 7025-7075 MHz, the fixed-satellite service (space-to-Earth) is allocated on a primary basis, but the use of this allocation shall be limited to two grandfathered satellite systems. Associated earth stations located within 300 meters of the following locations shall be grandfathered: (a) In the band 7025-7075 MHz, Brewster, WA (48º 08' 46.7" N, 119º 42' 8.0" W); and (b) In the sub-band 7025-7055 MHz, Clifton, TX (31º 47' 58.5" N, 97º 36' 46.7" W) and Finca Pascual, PR (17º 58' 41.8" N, 67º 8' 12.6" W).

NG173 In the band 216-220 MHz, secondary telemetry operations are permitted subject to the requirements of 47 CFR 90.259. After January 1, 2002, no new assignments shall be authorized in the sub-band 216-217 MHz.

NG175 In the band 38.6-40 GHz, television pickup stations that were authorized on or before April 16, 2003, may continue to operate on a secondary basis to stations operating in accordance with the Table of Frequency Allocations.

* * * * *

NG184 Land mobile stations in the bands 11.7-12.2 GHz and 14.2-14.4 GHz and fixed stations in the band 11.7-12.1 GHz that are licensed pursuant to 47 CFR part 101, subpart J as of March 1, 2005 may continue to operate on a secondary basis until their license expires. Existing licenses issued pursuant to 47 CFR part 101, subpart J will not be renewed in the bands 11.7-12.2 GHz and 14.2-14.4 GHz.

* * * * *

FEDERAL GOVERNMENT (G) FOOTNOTES

* * * * *

G2 In the bands 216-217 MHz, 220-225 MHz, 420-450 MHz (except as provided by US217 and G129), 890-902 MHz, 928-942 MHz, 1300-1390 MHz, 2310-2390 MHz, 2417-2450 MHz, 2700-2900 MHz, 3300-3500 MHz (except as provided by footnote US108), 5650-5925 MHz, and 9000-9200 MHz, the Federal radiolocation service is limited to the military services.

* * * * *

G6 Military tactical fixed and mobile operations may be conducted nationally on a secondary basis: (a) To the meteorological aids service in the band 403-406 MHz; and (b) To the radio astronomy service in the band 406.1-410 MHz. Such fixed and mobile operations are subject to local coordination to ensure that harmful interference will not be caused to the services to which the bands are allocated.

* * * * *

G127 Federal Travelers Information Stations (TIS) on 1610 kHz have co-primary status with AM Broadcast assignments. Federal TIS authorized as of August 4, 1994, preclude subsequent assignment for conflicting allotments.

* * * * *

G133 In the band 7190-7235 MHz, emissions to deep space are prohibited. Geostationary satellites in the space research service operating in the band 7190-7235 MHz shall not claim protection from existing and future stations in the fixed service and ITU Radio Regulation No. 5.43A does not apply.

PART 25 – SATELLITE COMMUNICATION

7. The authority citation for part 25 continues to read as follows:

AUTHORITY: 47 U.S.C. 701–744. Interprets or applies Sections 4, 301, 302, 303, 307, 309 and 332 of the Communications Act, as amended, 47 U.S.C. Sections 154, 301, 302, 303, 307, 309 and 332, unless otherwise noted.

8. Paragraph (a)(1) of Section 25.202 is amended to read as follows:

§ 25.202 Frequencies, frequency tolerance and emission limitations.

(a)(1) Frequency band. The following frequencies are available for use by the fixed-satellite service. Precise frequencies and bandwidths of emission shall be assigned on a case-by-case basis. The Table follows:

space-to-Earth (GHz)	Earth-to-space (GHz)
3.65-3.7 [17]	5.091-5.25 [12, 19]
3.7-4.2 [1]	5.925-6.425 [1]
6.7-7.025 [12]	12.75-13.25 [1, 12, 14]
10.7-10.95 [1, 12]	13.75-14 [4, 12]
10.95-11.2 [1, 2, 12]	14-14.2 [5]
11.2-11.45 [1, 12]	14.2-14.5
11.45-11.7 [1, 2, 12]	15.43-15.63 [12, 20]
11.7-12.2 [3]	17.3-17.8 [9]
12.2-12.7 [13]	24.75-25.05 [18]
18.3-18.58 [1, 10]	25.05-25.25 [1, 18]
18.58-18.8 [6, 10, 11]	27.5-29.5 [1]
18.8-19.3 [7, 10]	29.5-30
19.3-19.7 [8, 10]	47.2-50.2 [1]
19.7-20.2 [10]	
37.5-40 [15, 16]	
40-42 [16]	

[1] This band is shared coequally with terrestrial radiocommunication services.

[2] Use of this band by geostationary satellite orbit satellite systems in the fixed-satellite service is limited to international systems; i.e., other than domestic systems.

[3] Fixed-satellite transponders may be used additionally for transmissions in the broadcasting-satellite service.

[4] This band is shared on an equal basis with the Government radiolocation service and grandfathered space stations in the Tracking and Data Relay Satellite System.

[5] In this band, stations in the radionavigation service shall operate on a secondary basis to the fixed-satellite service.

[6] The band 18.58-18.8 GHz is shared co-equally with existing terrestrial radiocommunication systems until June 8, 2010.

[7] The band 18.8-19.3 GHz is shared co-equally with terrestrial radiocommunication services, until June 8, 2010. After this date, the sub-band 19.26-19.3 GHz is shared co-equally with existing terrestrial radiocommunication systems.

[8] The use of the band 19.3-19.7 GHz by the fixed-satellite service (space-to-Earth) is limited to feeder links for the mobile-satellite service.

[9] The use of the band 17.3-17.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for broadcasting-satellite service, and the sub-band 17.7-17.8 GHz is shared co-equally with terrestrial fixed services.

[10] This band is shared co-equally with the Federal Government fixed-satellite service.

[11] The band 18.6-18.8 GHz is shared co-equally with the non-Federal Government and Federal Government Earth exploration-satellite (passive) and space research (passive) services.

[12] Use of this band by non-geostationary satellite orbit systems in the fixed-satellite service is limited to gateway earth station operations.

[13] Use of this band by the fixed-satellite service is limited to non-geostationary satellite orbit systems.

[14] Use of this band by NGSO FSS gateway earth station uplink operations is subject to the provisions of § 2.106 NG53.

[15] Use of this band by the fixed-satellite service is limited to "gateway" earth station operations, provided the licensee under this Part obtains a license under Part 101 of this Chapter or an agreement from a Part 101 licensee for the area in which an earth station is to be located. Satellite earth station facilities in this band may not be ubiquitously deployed and may not be used to serve individual consumers.

[16] The band 37.5-40.0 GHz is designated as being available for use by the fixed and mobile services and the band 40.0-42.0 GHz is designated as being available for use by the fixed-satellite service.

[17] FSS earth stations in this band must operate on a secondary basis to terrestrial radiocommunication services, except that the band is shared co-equally between certain grandfathered earth stations and the terrestrial radiocommunication services.

[18] Use of the band 24.75-25.25 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for space stations in the broadcasting-satellite service, and the sub-band 25.05-25.25 GHz is shared co-equally with terrestrial fixed services.

[19] See 47 CFR 2.106, footnotes 5.444A and US344, for conditions that apply to this band.

[20] See 47 CFR 2.106, footnotes 5.511C and US359, for conditions that apply to this band.

* * * * *

9. Paragraph (n) of Section 25.208 is amended to read as follows:

§ 25.208 Power flux density limits.

* * * * *

(n) The power-flux density at the Earth's surface produced by emissions from a space station in the fixed-satellite service (space-to-Earth), for all conditions and for all methods of modulation, shall not exceed the limits given in Table N. These limits relate to the power flux-density which would be obtained under assumed free-space conditions.

Table N–Limits of Power-Flux Density From Space Stations in the Band 6700-7075 MHz

Frequency band	Limit in dB(W/m^2) for angle of arrival (δ) above the horizontal plane			Reference bandwidth
	0^0 -5^0	5^0 -25^0	25^0 -90^0	
6700-6825 MHz	-137……	-137 + 0.5(δ-5)…….	-127……..	1 MHz
6825-7075 MHz	-154…… and -134…….	-154 + 0.5(δ-5)……. and -134 + 0.5(δ-5)…….	-144…….. and -124……..	4 kHz 1 MHz

* * * * *

PART 73 – RADIO BROADCAST SERVICES

10. The authority citation for part 73 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 303, 334, 336.

11. Sections 73.702 is amended by revising paragraphs (f)(1), (g)(1), and (g)(2)(i) to read as follows:

§ 73.702 Assignment and use of frequencies.

* * * * *

(f) * * *

(1) Worldwide allocations. In the ITU Radio Regulations, the following bands are allocated to the broadcasting service on a primary and exclusive basis throughout the world: 5900-6200 kHz, 7300-7350 kHz, 9400-9900 kHz, 11600-12100 kHz, 13570-13870 kHz, 15100-15800 kHz, 17480-17900 kHz, 18900-19020 kHz, 21450-21850 kHz, and 25670-26100 kHz.

* * * * *

(g) * * *

(1) Worldwide allocations. Until March 29, 2009, the band 7350-7400 kHz is allocated to the broadcasting and fixed services on a co-primary basis throughout the world. After March 29, 2009, the band 7350-7400 kHz is allocated to the broadcasting service on an exclusive basis throughout the world, except in the countries listed in 47 CFR 2.106, footnote 5.143C where the band 7350-7400 kHz continues to be allocated to the broadcasting and fixed services on a co-primary basis.

(2) Regional allocations. (i) Until March 29, 2009, the band 7100-7200 kHz is allocated to the amateur and broadcasting services on a co-primary basis in Region 1 and Region 3; however, during this transition period, the use of the band 7100-7200 kHz by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3. Where practical, requests for frequency assignments in the band 7100-7200 kHz shall be satisfied within the band 7200-7350 kHz. After March 29, 2009, the band 7100-7200 kHz is no longer allocated to the broadcasting service.

* * * * *

PART 74—EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTIONAL SERVICES

12. The authority citation for part 90 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 303, 307, 336(f), 336(h) and 554.

13. Section 74.502 is amended by revising paragraph (a) to read as follows:

§ 74.502 Frequency assignment.

(a) Except as provided in NG30, broadcast auxiliary stations licensed as of November 21, 1984, to operate in the band 942-944 MHz[1] may continue to operate on a co-equal, primary basis to other stations and services operating in the band in accordance with the Table of Frequency Allocations. These stations will be protected from possible interference caused by new users of the band by the technical standards specified in §101.105(c)(2).

[1] NOTE: In addition to this band, stations in Puerto Rico may continue to be authorized on 942.5, 943.0, 943.5, 944.0 MHz in the band 942-944 MHz on a primary basis to stations and services operating in accordance with the Table of Frequency Allocations.

* * * * *

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

14. The authority citation for part 90 continues to read as follows:

AUTHORITY: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), 332(c)(7).

15. Revise the entry "15,700 to 17,700" MHz in the Radiolocation Service Frequency Table in paragraph (b) of Section 90.103 to read as follows:

§ 90.103 Radiolocation Service.

* * * * *

(b) Frequencies available. * * *

RADIOLOCATION SERVICE FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitation
*	*	*
Megahertz		
*	*	*
15,700 to 17,300…….	..…do……	12
*	*	*

* * * * *

16. Section 90.242 is amended by revising paragraph (a)(3) to read as follows:

§ 90.242 Travelers' information stations.

(a) * * *

* * * * *

(3) Travelers' Information Stations will be authorized on a primary basis on 530 kHz and on a secondary basis to stations authorized on a primary basis in the band 535-1705 kHz.

PART 97 – AMATEUR RADIO SERVICE

17. The authority citation for part 97 continues to read as follows:

AUTHORITY: 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-155, 301-609, unless otherwise noted.

18. Section 97.301 is amended by revising the tables in paragraph (b), (c), and (d) to read as follows:

§ 97.301 Authorized frequency bands.

* * * * *

(a) For a station having a control operator who has been granted a Technician, Technician Plus, General, Advanced, or Amateur Extra Class operator license, who holds a CEPT radio amateur license, or who holds any class of IARP:

Wavelength band	ITU—Region 1	ITU—Region 2	ITU—Region 3	Sharing requirements see § 97.303 (Paragraph)
VHF	MHz	MHz	MHz	
6 m…….....	……	50–54…….	50–54……..	(a)
2 m…….	144–146……..	144–148…….	144–148……..	(a)
1.25 m…….	……	219–220…….	……	(a), (e)
Do…..	……	222–225	……	(a)
UHF	MHz	MHz	MHz	
70 cm……..	430–440……..	420–450…….	420–450……..	(a), (b), (f)
33 cm……..….	……	902–928…….	……	(a), (b), (g)
23 cm……..	1240–1300…..	1240–1300….	1240–1300…..	(b), (h), (i)
13 cm……..	2300–2310…..	2300–2310….	2300–2310…..	(a), (b), (j)
Do…..	2390–2450…..	2390–2450….	2390–2450…..	(a), (b), (j)
SHF	GHz	GHz	GHz	
9 cm……	3.4–3.475……	3.3–3.5……...	3.3–3.5…….	(a), (b), (k), (l)
5 cm……	5.650–5.850…	5.650–5.925…	5.650–5.850….	(a), (b), (m)
3 cm……	10.00–10.50…	10.00–10.50…	10.00–10.50….	(a), (c), (i), (n)
1.2 cm…….	24.00–24.25…	24.00–24.25…	24.00–24.25….	(a), (b), (i), (o)
EHF	GHz	GHz	GHz	
6 mm…….	47.0–47.2…….	47.0–47.2……	47.0–47.2…….	
4 mm…….	76–81……	76–81……..	76–81…….....	(b), (c), (h), (k), (r)
2.5 mm……..	122.25–123…..	122.25–123…	122.25–123…..	(p)
2 mm…….	134–141……...	134–141…….	134–141……...	(b), (c), (h), (k)
1 mm…….	241–250…… above 275…….	241–250……. above 275…..	241–250……... above 275……	(b), (c), (h), (k), (q) (k)

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(d) For a station having a control operator who has been granted an operator license of General Class:

Wavelength band	ITU—Region 1	ITU—Region 2	ITU—Region 3	Sharing requirements see § 97.303 (Paragraph)
MF	kHz	kHz	kHz	
160 m……..	1810-1850…..	1800–2000….....	1800–2000……..	(a), (b), (c)
HF	MHz	MHz	MHz	
80 m…….....	3.525-3.60…..	3.525–3.60….....	3.525–3.60……..	(a)
75 m…….....	…….	3.80–4.00…….	3.80–3.90…….....	(a)
40 m……	7.025-7.125….	7.025–7.125…….	7.025–7.125…….	(a)
Do…..	…….	7.175–7.300…….	…….	(a)
30 m……	10.10-10.15…	10.10–10.15…….	10.10–10.15….....	(d)
20 m……..…..…	14.025-14.150	14.025–14.150….	14.025–14.150….	
Do…..	14.225–14.350.	14.225–14.350….	14.225–14.350….	
17 m……...…	18.068-18.168	18.068–18.168….	18.068–18.168….	
15 m……	21.025-21.200	21.025–21.200….	21.025–21.200….	
Do…..	21.275-21.45…	21.275–21.45…..	21.275–21.45…..	
12 m……	24.89-24.99	24.89–24.99…….	24.89–24.99……	
10 m……	28.0-29.7	28.0–29.7……	28.0–29.7……	

(e) For a station having a control operator who has been granted an operator license of Novice Class, Technician Class, or Technician Plus Class:

Wavelength band	ITU—Region 1	ITU—Region 2	ITU—Region 3	Sharing requirements see § 97.303 (Paragraph)
HF	MHz	MHz	MHz	
80 m……..	3.525-3.60…..	3.525-3.60…….	3.525-3.60……..	(a)
40 m…….	7.025-7.075…	7.025-7.100……	7.025-7.075…….	
Do….	7.100-7.125….	7.100-7.125……	7.100-7.125…….	(a), (t)
15 m…….	21.025-21.20…	21.025-21.20…..	21.025-21.20…..	
10 m…….	28.0-28.5…….	28.0-28.5……	28.0-28.5……	
VHF	MHz	MHz	MHz	
1.25 m……	…….	222-225…….	……...	(a)
UHF	MHz	MHz	MHz	
23 cm……	1270-1295…..	1270-1295…….	1270-1295…….	(h), (i)

19. Section 97.303 is amended by revising paragraphs (b) and (r) to read as follows:

§ 97.303 Frequency sharing requirements.

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(b) No amateur station transmitting in the 1900-2000 kHz segment, the 70 cm band, the 33 cm band, the 23 cm band, the 13 cm band, the 9 cm band, the 5 cm band, the 3 cm band, the 24.05-24.25 GHz segment, the 76-77.5 GHz segment, the 78-81 GHz segment, the 136-141 GHz segment, and the 241-248 GHz segment shall cause harmful interference to, nor is protected from interference due to the operation of, the Federal radiolocation service.

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(r) Authorization of the 76-77 GHz segment of the 4 mm band for amateur station transmissions is suspended until such time that the Commission may determine that amateur station transmissions in this segment will not pose a safety threat to vehicle radar systems operating in this segment.

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